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General Scientific

DISEASE OF THE RED MARROW.

Report of Cases.

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It is necessary to become familiar with the functions of the various structures that enter into the formation of bones and joints. Bones are compact or cancellous. The canal of bone is filled with marrow. Bones, whether compact or cancellous, are filled with channels and spaces which contain the marrow. The marrow is either red or yellow; the former consists of connective tissue holding numbers of most diverse cells. The yellow marrow contains a good deal of fat and very few cells. The former is found in spongy bone and the latter in dense bone. The periosteum covers the bone and is composed of two layers—an inner cellular layer and an outer fibrous layer. The marrow and the periosteum communicate and both nourish the bone. The joint cartilage and the epiphyseal cartilage get their nourishment from the marrow and are passive like the bone itself, simply responding to the inflammatory changes that take place in the marrow and the periosteum. The synovia lines the capsule of the joint and contains lymph spaces and blood vessels; it is continuous with the cartilage of the joint.

It is necessary to have some understanding of the way red bone marrow becomes invaded. Notably the work of Dr. John B. Murphy has shown it is preceded by a more superficial local infection and he has carefully outlined its course in the bone so that we are now able to recognize osteomyelitis early enough to prevent disaster to the joint. The preceding infection is frequently mild so as to appear inconsequential to the patient and he has entirely forgotten it by the time the bone is involved. In fact, it may be only what would accompany bacteria growing in the open passages of the body and passing in with the nutrient stream.

Several bone foci may co-exist but this is rare at the outset. Later others may follow the original focus in bone. The result of the invasion is the formation of an abscess in the bone.

Bacteria almost never enter the arteries at the original site. They find an easier route by way of the lymphatics and the veins. Those that finally reach the red marrow are carried along in a herd and escape where the current finally slows down in the lymph spaces.

Tubercular disease attacks the red marrow of bone, the periosteum and the synovia. When it attacks the marrow of bone it exhibits tubercules. This shows active inflammation at times with engorgement of blood vessels, bacteria and pus. If the bone is denuded of its periosteum it gets nourishment from the marrow. If the marrow becomes diseased and destroyed, the bone gets its nourishment from the periosteum. When both are destroyed the bone dies and separates —the cartilage suffers the same fate. Neither bone proper nor cartilage become infected, in fact they restrain the onward march of inflammation.

The active tissues of the joint are continuous with one another and react in a similar way to disease. Disease may start in one and spread in another.

Case 1 is one of extensive tubercular disease of the red marrow of the humerus and the upper end of the ulna, and the synovial membrane of the elbow joint with partial excision resulting in recovery of the function of the elbow joint followed by active tubercular processes in other parts of the body.

O. S., twenty-one years old, machinist helper. Father died of an accident; mother alive and well; one brother died of consumption in 1910. Seven years ago he injured his left arm above the elbow in machinery. He suffered pain and swelling in that arm from that time on. It finally broke down and discharged. He was operated on at the Post Graduate Hospital, April 14, 1910, for tubercular osteomyelitis, an incision was made at the lower end of the left humerus and the bone scraped. This same operation was repeated September, 1911; the arm continued to discharge until I saw him October 9, 1911. I took the *x*-ray in plate 1; this shows a tubercular focus of the red marrow of the humerus at the middle third, another involving the lower end of that bone with an area of healthy bone between, and a focus in the upper end of the ulna.

I sent him to the Long Island College Hospital, October 26, 1911, and excised the lower end of the humerus and the upper end of the ulna on a level with the head of the radius. The tubercular bacillus was recovered from the mass of bone removed. He left the hospital December 2, using his elbow joint. On December 15, 1911, an abscess appeared in his right calf and the whole calf was badly swollen. This was opened and drained. He was given two injections of tuberculin at the interval of a week with considerable reaction; temperature rose to 102. The tuberculin was not repeated. There was no improvement. Finally another abscess appeared at the root of his nose, I opened this and removed some dead bone. I then gave him an injection of 10 cc. n/10 sodium hydroxide in the vein. This was repeated three times between February 23 and April 22, 1913. All the foci of disease began to clear up one week after the first injection. A swelling over the right parietal bone which marked the last focus of the disease was the last to disappear by the end of April. He has not suffered a recurrence of the disease since that time.

Plate 2 shows the change that has taken place in the elbow joint. All the bones entering into the formation of this joint are free from disease. There appears to be some osteoporosis of the middle third of the shaft of the humerus.

Comparing this with plate 1, it is fair to say that the red marrow in this region which was the seat of tubercular disease, has been destroyed, and that it has disappeared. This is borne out by examination of the arm. This was accomplished by a partial excision of the elbow joint and the destruction of the red marrow in the shaft of the humerus.

Ely has asserted "that if the synovia and red marrow disappear from any locality, tubercular disease cannot exist. That without them there can be no such thing as joint tuberculosis." Attempts have been made to bring about this result by ankylosis or dislocation and thus effect a cure of this disease in the joint. This treatment has some value especially when it is remembered that excisions of joints for tubercular disease are of little avail unless they remove every atom of the disease.

Dr. T. Wingate Todd presents a case in the March, 1913, number of *Annals of Surgery*, which closely resembles mine, of old tubercular disease of the elbow cured by partial excision, the articular head of the radius being left; this patient had active tubercular lesions of bone in other parts of the body, particularly the frontal bone which was necrotic on the right side and caused death through an abscess of mixed infection in that area of the brain. This case would seem to contradict the law laid down by Ely "that without the synovia and the red marrow there can be no such thing as joint tuberculosis through an apparent corollary to this law that where tubercular disease has invaded the joint it cannot be eradicated without removing all the synovia and the red marrow entering into this joint."

On more careful consideration it will appear that this is not a corollary of the law laid down by Ely and is not borne out by the facts as appear in the case cited.

Case 2. H. B., single, age thirty-four. One sister died with tuberculosis of the lungs. Seven years ago she developed tubercular osteomyelitis of the right inner femoral condyle and the head of the tibia. These foci were allowed to break through and involve the joint. The knee was then operated on and pus evacuated. The disease quieted down for six years and then lighted up again in the thigh. This was opened and the bone scraped. Sinuses were left which continued to discharge for about a year when she came to me. Her temperature was 101 and there were pain and inflammation over the region of the right knee joint with considerable discharge. Plate 3 shows the invasion of the red marrow of the femur and the upper end of the tibia. I gave her an intravenous injection of 10 cc. of n/10 sodium hydroxide; in a week I gave her 14 cc., and in another week I gave her 16 cc. The temperature became normal, the swelling went down, pain disappeared and the discharge ceased. Plate 4 shows the repair of both bones, the tibia having become almost normal. I have followed this case for about a year and during that time there has been no recurrence of the disease in the tibia. The femoral condyle which was the original point of surgical attack leaving sinuses and mixed infection showed some discharge after six months.

Case 3. F. A., peddler, age twenty-eight, came to my service at the Long Island College Hospital with a tumor at the sternal end of the left clavicle and a tubercle back of his right ear. Plate 5 showed tubercular osteomyelitis at the inner end of the clavicle, the sternum and the first rib. I removed the entire tubercular mass, split the free end of the clavicle along the long axis and turned the piece of bone over and grafted it into the defect. The wound was closed.

PLATE 1

PLATE 2

PLATE 3

PLATE 4

PLATE 5

PLATE 6

PLATE 7

PLATE 8

PLATE 9

PLATE 10

PLATE 11

The tumor was opened and contained pus. The laboratory reported this to be tubercular. I gave this man 10 cc. of n/10 sodium hydroxide in the vein one week before the operation, another 10 cc. thirteen days after the operation, another 10 cc. two weeks later, and 25 cc. of n/20 sodium hydroxide two weeks later. The wound healed and the graft grew in without interruption. Plate 6 shows the final result. The tubercle back

of the ear disappeared in five weeks. I have watched this case for a year and there has been no recurrence.

Case 4. T. M., school boy, age 15, born in Italy. Osteomyelitis of the right hip and acetabulum. Family history negative. Had enlarged glands of the neck as a child. Was taken suddenly with pain in the right hip at night, chilly feelings had preceded this and his temperature rose; he staid in bed the next day and when he attempted to stand his leg gave out from the acute deep pain in the hip. Two days later he was sent to the hospital, had a temperature of 103. The *x*-ray in plate 7 shows a focus of disease in the acetabulum on the right side just above the head of the femur. An incision was made from a point 3 inches above the great trochanter vertically downward just internal to it; this was carried down to the bone, a drill hole was made through the superior surface of the acetabulum, pus escaped from this bone; a heavy bone curette was inserted and the roof broken away leaving a cavity; this was drained. He was given an injection of 25 cc. n/20 sodium hydroxide in the vein. He remained in the hospital from July 21 to September 20. Was discharged cured without any impairment of the function of the hip joint. Plate 8 shows the final result with the bismuth in the cavity. A culture from the pus showed staphylococcus areus.

Case 5. S. P., age 19, born in Italy, works in a can factory. Previous personal history negative. Chronic osteomyelitis of the lower end of the left femur. Suffered with his left leg at the age of 4 years. He had a swelling of this leg and an operation was performed which only partially relieved him; he had pain and swelling of the left thigh which would subside at times. He was brought to the hospital with a temperature of 101 and swelling and redness at the lower end of the left femur, motion at the joint was limited on account of the pain. *X*-ray in plate 9 was taken and shows a focus of disease just above and extending into the internal condyle of the right femur. A linear osteotomy was done at the lower end of the left femur, a hole was drilled into the bone and pus appeared through the opening, the bone was curetted leaving a large cavity extending into the condyle. He was given an injection of 25 cc. n/20 sodium hydroxide in the vein. Plate 10 shows the cavity. A culture from the pus showed staphylococcus areus. He remained in the hospital from August 23 to September 25 when he was discharged cured without any impairment of the function of the knee joint.

Case 6. J. G., school boy, age 12 years, U. S. Acute osteomyelitis of the head of the right fibula. Family history negative. Had mumps and whooping cough five years ago. Three weeks ago had pharyngitis followed by a bad cold. When he came to the hospital his while playing one week before he felt his leg suddenly pain him; his leg continued to pain for three days when he went to bed with a chill and he remained in bed until he was brought to the hospital after one week of suffering. When I saw him he was lying in bed, his face was pale and drawn in pain, temperature was 105 2/5, there was a tender spot over the external tuberosity of the right tibia somewhat toward the front. An immediate operation was performed. An incision was made over the external tuberosity of the tibia, a drill was carried in to this tuberosity in various directions and at various points, some serum was discharged and the tuberosity seemed to be soft but otherwise normal. As this did not account for the severity of the symptoms, an incision was made over the head of the fibula, a drill hole made in the head of this bone permitting the escape of a considerable quantity of pus and the entire head of the fibula was curetted away. I should have continued to make drill holes until rewarded as the picture of acute osteomyelitis is so definite that one can hardly make a mistake though the exact point of invasion will escape without the help of an *x*-ray picture. This emphasizes the importance of taking a picture at the time of an examination. He was given an injection of 25 cc. n/20 sodium hydroxide in the vein. A culture from the pus showed staphylococcus areus. The child remained in the hospital from September 15 to October 13 and was discharged cured without any impairment of the knee joint. The *x*-ray in plate 11 shows the bone abscess.

Conclusions.

It is not always possible to strike the exact position of the cavity in bone abscess even if an *x*-ray picture has been taken. Drill openings should be made at various points until rewarded.

An early opening wll prevent disaster to the joint.

When bacteria are carried in the circulation, chance determines where the new focus will appear.

Tubercular disease of bones and joints is confined to the red marrow, the periosteum and the synovia.

The obliteration of these arrests the disease whether by ankylosis or by excision.

If excision can remove every atom of the disease and still preserve some of the tissues which enter into the formation of the joint or of bone, the tubercular process will be locally arrested just the same.

Sodium hydroxide given intravenously at the time of an operation for disease of the red marrow is of great value to increase the specific protective substances in the blood stream by breaking down the leucocytes.

30 Schermerhorn Street.

Urticaria.

A case of urticaria treated by human serum obtained from the brother of the patient, by the late W. Swann, of New York, is reported in the *J. A. M. A.*, Feb. 27. The treatment was suggested by the increased coagulation time of the blood, and the fact that when a drop of fresh human serum was added to the patient's blood, the time returned to normal. The history here given merely shows results in one type of case, and is not offered as applicable to all types. The results of the treatment were good in this thoroughly reported instance.

Colloidal Solutions in Shock.

To meet the conditions of loss of blood in medical and surgical practice and the consequent low blood pressure, J. J. Hogan, San Francisco, recommends the use of colloidal gelatin solutions injected intravenously to obviate the loss, which can be only imperfectly done by use of salt solutions. This latter does not remain in the blood vessels, and the blood pressure, brought up by the injections, may disappear after a limited time, on account of the lack of the colloids naturally present. He describes and illustrates by graphic curves the effects of injections of salt solution alone or combined with a colloid, showing how the latter tends to hold the fluid in the blood. The best transfusion fluid, of course, is whole blood, but its usefulness is limited by the obvious difficulties and danger of the method. Hence, he has advised a gelatin solution to be added to the salt solution, properly sterilized of course, and reports cases in which it has been employed by him or under his observation.—(*J. A. M. A.*, Feb. 27.)

TRAUMATIC PNEUMONIA.

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Some years ago I published a case of afebrile pneumonia with its accompanying bibliography.* As some of these atypical forms of pneumonia are very rare and interesting, not only because of their etiology but also because of the unusual course of the disease. I believe them to be of sufficient interest to report the following case:

E. E. B., age 42, was caught between two trolley cars on March 15, 1915, causing a fracture of the right shoulder joint and a fracture of the third, fourth and fifth ribs. There was only about eight inches of space between the two cars and the patient was naturally squeezed or wedged in that space. I saw him about one hour after the accident and he was suffering from shock and pain. I had him removed to his home and the fractures treated by the usual surgical procedures with the aid of morphin to alleviate his pain. He passed the first night after the accident very comfortably; his temperature was 100.4°, with a pulse ranging between 88 and 96; he had a slight cough and a moderate expectoration of a thick yellowish character but no blood. The bases of both lungs were dull on percussion and the breathing sounds were distinctly bronchial in character, the bronchial breathing extending from the lower border of the sixth rib to the base; blood pressure was 125, and the heart sounds normal; the urine contained a faint trace of albumen but no renal elements. During the following ten days his cough continued, the expectoration changing from the thick yellowish character to one more mucoid in consistence, at no time was there any blood. At the end of the fifth day the moderate albuminuria disappeared entirely; at the end of two weeks the cough disappeared, but the bronchial breathing persisted until the end of the third week after which there were a few coarse mucous rales which disappeared in a few days. It is interesting to note that with the marked bronchial breathing and dullness which persisted for two weeks, that there were so few objective symptoms of the marked consolation, notwithstanding the fact that there must have been considerable compression of both thoracic cavities.

There had been very little written about pneumonia in its relationship to trauma until ten years ago, when Littens published a monograph of the cases coming under his attention in the Charite in Berlin. Littens divides traumatic pneumonia into those occurring from traumas from without, as, for instance, falls, heavy weights falling on the chest, etc., and those occurring from bullets entering the lung or stab wounds, or the puncturing of the chest from sharp spicae of broken ribs. The predisposition to the first form of traumatic pneumonia is due, according to Littens, to the existence of previous adhesions of the pleura, infiltrations of the lung or bronchiectasis, these cause, as he states, a lessening of the elasticity of the lung tissue and may result in an inflammatory condition in a part of the lung quite some distance from the point of trauma. These conditions of trauma must be differentiated from those cases of acute pneumococcus infection following severe accidents. According to Littens, in three hundred and twenty cases of pneumonias entering the Charite, fourteen of these were due to trauma, making a percentage of about 4.4%. On the other hand, Jurgensen reports in eight hundred and thirty cases a percentage of only 0.8%. In a good many cases there occurs a complicating empyema, and in two cases, reported by him, death resulted from sepsis.

The interesting features of this case of mine are the absence of fever, and the rapid uncomplicated recovery.

136 West 87th Street.

*Archives of Pediatrics, August, 1907.

NINETY PER CENT. OF ACCIDENTAL BURNS AVOIDABLE.

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During the year 1914 there were 185 deaths in Brooklyn from accidental burns. A careful analysis of the records of the Coroner's office reveals the striking fact that 90 per cent. of these fatalities could have been prevented by the exercise of a reasonable amount of caution, and many of the deaths were due entirely to neglect, while comparatively few were unavoidable.

The most remarkable case of neglect was that of a three-months-old baby, which was allowed to play with matches and was strapped in its carriage and left alone while the mother went shopping. Although the infant's parent was not absent from the house more than ten minutes, when she returned the carriage was in flames and the baby dead. Although this is the most flagrant case of carelessness, it is but one of many others where lives were lost because of utter disregard of danger.

Another unusual case that might have been avoided was that of an elderly woman who started to brew herself a cup of tea. She put on the tea kettle, full of water, on a gas stove and sat down beside the stove waiting for the water to reach the boiling point. While waiting she fell asleep in the chair. Meanwhile the water boiled over, scalding the woman and causing burns and shock from which she died.

Of the total number of tragedies, only eight lives were lost in conflagrations, whereas there were fourteen deaths following burns received from tea, coffee, cocoa, milk and soup. Gasoline, which is so inflammable and so generally used, caused only one death.

More deaths were caused by bonfires than by any other agency, and this casualty list is all the more lamentable because the majority of the victims were little children, who met death through their own recklessness, or, what is more likely, the carelessness of their parents. In the Borough of Brooklyn forty-five deaths resulted from bonfires which could have been avoided had both parents and children exercised proper precaution. The police are doing good work in extinguishing bonfires when discovered, and the Brooklyn Institution for Safety has distributed placards and pamphlets in all the public schools, warning the children of the dangers of bonfires. In spite of these precautions the death list is large, and I have started a campaign to urge parents to safeguard further the lives of their children by fireproofing the youngsters' play suits with a solution of ammonium phosphate—one pound dissolved in a gallon of water.

The complete list of fatalities from burns during the year 1914 is as follows: Bonfires, 45; stoves, 36; hot water, 35; matches, 30; conflagrations, 8; explosions, 6; steam, 5; tea, 5; coffee, 2; cocoa, 1; milk, 2; soup, 4; lamps, 4; tar, 1; gasoline, 1; total, 185.

396 Franklin Avenue.

Furunculosis in the anal region is sometimes responsible for pruritus ani.

STRICTURE OF THE URETHRA*—III.

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We last discussed the operative treatment of stricture. Today I will talk about the treatment of strictures which are not operable. A stricture is defined as a ring of organized fibrous tissue surrounding the urethra. There are two causes of stricture; the most common is, of course, a gonorrhea, and the other is traumatism. We have strictures, therefore, due to the inflammation caused by gonorrhea, and also from a rupture of the urethra.

In order to explain the pathology or formation of stricture we have to revert to the pathology of gonorrhea. The inflammatory action in gonorrhea causes a throwing-out of small round cells which surround the urethra. Many are absorbed; but if not absorbed, they become converted into fibrous connective tissue and the fibrous connective tissue is what is actually the stricture.

Traumatism acts in another way. A traumatic rupture of the urethra occurs from a man falling on a barrel or something of that kind, striking the perineum against the suspensory ligament. When the urethra is forced violently up against the suspensory ligament it gives way and is torn through on the roof. We recently had a case here of a dock-builder working alongside of a vessel. In the water were big spiles. He fell from the vessel between 20 and 30 feet and was caught on one of the floating spiles. He was brought to the hospital with contusions around the perineum—and he could not urinate. We were unable to catheterize him. Dr. Read did an external urethrotomy and found a traumatic rupture of the urethra. When these ruptures heal (sometimes they are so small that they escape attention) considerable scar tissue remains as in gonorrheal stricture, making the calibre of the urethra smaller.

There are two varieties of stricture—the soft and recent and the hard and organized. That is an important clinical distinction because every stricture in the beginning is due to soft, round-celled infiltration, and in that stage this is caused to disappear by sounds or dilators. Afterwards it becomes hard and organized, fibrous tissue forms and we can no longer get it to absorb very readily, and very often has to be cut.

We recognize three forms of stricture:

We speak of the linear stricture, which is a fine line; the annual stricture, which is a broader line surrounding the urethra; and the tortuous or in-nodular stricture, which is a heavy mass of scar tissue which cannot be brought to absorption.

A traumatic stricture is always single and situated at the point of rupture of the urethra. Gonorrheal stricture are usually multiple and there are apt to be two or three at different points of the canal.

The favorite locations for stricture are the pendulous and the bulbo-membranous urethra and they occur mostly at these points because the pus stagnates there and gonococci have an opportunity to penetrate into the depths. More round-celled infiltration is thrown out in consequence and stricture occurs in these places.

The changes which take place behind the stricture are very important indeed. In the first place, the urethra becomes distended and pouch-like behind the stricture. A drop or two of urine which does not escape with the rest of the urine, remains behind, decomposition results, irritates the mucous membrane and causes a constant discharge. Sometimes as a result of this long-continued ulceration of the mucous membrane a small ulceration takes place, the mucous membrane gives way and drops of urine work down into the tissues and finally break out through the skin and we have a fistulous tract. If a large amount of mucous membrane gives way at once and a large quantity of urine escapes into the tissues, we have an extravasation of urine and, as the French say, "The patient 'pisses' into his own tissues."

The bladder and kidneys become affected in time. The infection of the bladder is very important. In order to overcome the obstruction, the bladder hypertrophies, the muscular walls thicken and there is much more force required on the part of the bladder to empty itself. After a while the muscle plays out and becomes flaccid and residual urine accumulates and as soon as that accumulates the patient's trouble begins. Cystitis is always set up and then, after the cystitis and residual urine have lasted for some time, stone in the bladder or calculus is very apt to form. Urinary fever takes place at times, and the patient gradually runs down in health. Then, too, from the damming back of urine on the kidneys the ureters become dilated and distended, the pelvis of the kidney becomes distended and filled with urine and infection of the parenchyma of the kidney takes place, the patient develops pyelitis and pyelonephritis and the kidneys become so badly damaged that the slightest operative interference, even the passage of sounds or the drawing off the urine with a catheter, may cause an acute attack of urinary fever with chills and suppression of urine followed by death. That is, of course, in the cases of severe stricture of long standing which have lasted for many years. We see cases constantly in the big metropolitan hospitals, where all sorts of cases are coming in, which show the bad effects of neglected strictures.

The symptoms sometimes are marked and other times not so marked. The patient first notices frequent urination; he has to pass his water every two or three hours instead of voiding it four or five times a day. In the early stages this is due to congestion—to interference with the circulation of the posterior urethra. It becomes more irritable than natural and responds more readily to the stimulus of a few drops of urine.

Later on cystitis is set up. The irritability of the bladder is due to cystitis.

In the last stage, after the bladder becomes atonic and filled with residual urine, there is a constant dribbling and incontinence, just as we have in old men with enlarged prostates, and a few drops of urine escape every few minutes from the flaccid, over-distended bladder. This condition is known as paradoxical ischuria, which means that while the bladder is full, the patient is passing his water constantly, and although he has retention with this ischuria, still he does not have complete retention, for the water is constantly escaping.

Another symptom that the patient notices is dribbling after urinating. A few drops remain behind the stricture and after he thinks he is through, these drops make their escape and he is constantly wet. Naturally, the stream becomes smaller, or split, on account of the obstruction to the free outflow of urine.

A gleety discharge is constantly present from the catarrhal inflammation which is going on, and the mucous discharge flows from the meatus.

Retention of urine comes on in practically every case sooner or later from acute congestion, from catching

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cold, from venery or from alcoholism. There is swelling of the mucous membrane here and this narrowed canal is entirely shut off and occluded, so the patient cannot pass his water at all. Later on the occlusion of the canal arises from the slow contraction of the stricture.

The urethral pain is inconstant, neuralgic in type and oftentimes there is no pain at all present.

The patient has feeble erections and premature ejaculation and after ejaculation the semen is sometimes retained in the pouch here and dribbles away after the erection has subsided.

In making a diagnosis of stricture we cannot tell anything positive from the history. We can simply infer that the man has an obstruction of his canal. It may be a stone; it may be a prostate; it may be a stricture. We can only make a diagnosis by examination and there is only one instrument which can be used for making an examination properly and that is a flexible bulbous bougie. Frequently I have doctors bring patients to my office and I say, "Has he a stricture? Have you examined him?" They say, "Oh, yes. I passed a sound on him and he takes a 26 or 28 sound without any trouble. I want to caution you about making a diagnosis on the passage of a sound. Because a sound passes into the bladder does not mean that there is no stricture present. The sound passes through the stricture, distends it gradually and if it will go into the bladder it passes through and does not give any perception at all of being arrested. If you take a flexible bulbous bougie and pass it into the bladder and withdraw it, it catches and hangs on the stricture, and you feel a sensation as if it were caught against a fiddle string as you draw it out. So whenever you make an examination use a flexible bulbous bougie and not a steel sound for making a diagnosis.

In considering treatment, we can lay down this rule:

All soft and recent strictures and organized strictures must be treated by dilatation if not operated upon. Remember all soft and recent strictures and many organized strictures can be best treated by dilatation.

For dilatation we have two instruments—steel sounds and dilators. Both the sounds and dilators act in the same way. They have the effect of stretching the stricture.

The effects of dilatation are two-fold: In the first place, there is a mechanical stretching to which the part is subjected, and there is also (and this is the more important) a change in the vital function of the tissues. Every time that you dilate a stricture you stretch it mechanically, but not only that, you cause small tears to take place in the substance of the mass of stricture tissue. These are under the mucous membrane, in the substance of the mass of infiltration and do not bleed. They should not cause any severe bleeding, and the healing process which follows, results in an acceleration of the circulation, the blood-supply is quickened and there is an active congestion which helps to produce absorption of the mass of scar tissue which is thrown out, and that is the effect whether a sound or dilator is used, and it is in this manner that we can cure a good many of these strictures by means of dilatation.

After a time we are not able to bring about entirely the absorption of all the fibrous tissue, but by prolonged and constant dilatation over a period of months, we are able to change the character of that infiltration to such an extent that instead of there being a mass of scar tissue with a tendency to re-contract, the mass of scar tissue is converted into a sort of dead scar which no longer has any tendency to get smaller and contract again.

In all these cases we begin treatment with sounds. We carry on dilatation with sounds as far as we can and use a sound as large as we can pass through the stricture. In order to increase the effect of the sound and exert a sort of massage over the whole urethra with the fingers as the sound lies in the urethra, so that we get not only the effects of dilatation with the sound itself but also the beneficial effect of massage over the fixed body of the sound.

We continue the passage of sounds about once a week—not oftener than once in five days—until we can get to the point where the sound causes no longer any degree of dilatation. After the stricture has been dilated, to the full size of the sound, there is no use in using a sound. We must do something else. Up to within a few years, the only way in which we could treat stricture was by means of sounds. Then Oberlaender, of Dresden, devised a two-bladed dilator with which he obtained very good results and was able to get a degree of dilatation which he could not get with sounds. Then Kollmann, of Leipzig, found that the two-bladed instrument had some disadvantages and he made a four-bladed dilator, which is the instrument used to-day. We begin by dilating up to 30 or 32 and at the next setting (a week afterwards) we increase the dilatation up to 34 and in another week we get it up to 35 and a week later up to 36 and so on until we reach the point where we cannot get it any further. Some men take 45; some take 38, and the amount of dilatation has to be regulated by the tolerance of the patient, but, in a general way, that is the manner in which the instrument is used. There are two forms of dilators in use, the antero-posterior, which dilates the whole canal

from the meatus to the vesical sphincter, and the straight dilator, which is used only for the anterior urethra.

These dilators should not be used oftener than once a week, and after every instrumentation an irrigation of nitrate of silver should be made. Any excessive bleeding means an error in technic. If you dilate too much at one sitting you cause too large a tear in the stricture substance. If this happens you should let the patient rest two or three weeks until the lacerations have healed up. You should also use care not to dilate too rapidly at once. One or two numbers are quite enough at a sitting. If you dilate too rapidly you cause a laceration and get an infection with urosepsis. You must be very careful because these are powerful instruments (they have great leverage) and unless they are carefully handled a lot of damage may be done.

Q. With the Kollmann dilator what is the extent of dilatation?

A. The instrument goes up to 45. It is rarely that we have to carry it so high. We can dilate with the steel sound up to 30 or 32 because that is about the limit of the meatus. We carry the dilatation of the stricture with the dilator up to 36, 38 or 40, depending on the patient.

Q. Can you tell by the feel just how far to go?

A. Yes, by the feel and by the patient's sensation to an extent. It is a sort of a knack. You get a "hunch" after a while, after you have a few cases, as to how far you should go. You keep track of the dilatation by examining the patient with the bulb and also with the endoscope. You watch with the endoscope to see when the canal begins to get normal again.

We will take up the matter of very tight strictures. Those have to be handled differently. With a tight stricture we are very apt to make a false passage if we try to pass a sound.

A false passage is made by pushing the end of the sound into the periurethral tissues and generally takes place at the bulbo-membranous junction, and on the roof of the urethra.

It is made by attempting to depress the handle of the sound when the point is arrested, and should never occur if ordinary care and skill are used. A false passage is usually made with a small sound, and rarely with a sound of 26 or 30 calibre.

In order to avoid the accident of a false passage where we have a very tight stricture we do not try to use very small sounds. It is much safer in such cases to use a whalebone guide. By manipulation, which is aided by filling the urethra with oil, it is usually possible to pass the filiform whalebone guide through the stricture into the bladder. After we have succeeded in doing this we can either leave the guide tied in for twenty-four hours, for the purpose of continuous dilatation, or we can proceed to immediate operation.

I should like to say a word about the method which is termed continuous dilatation. If you leave the whalebone guide passed through the stricture into the bladder and fastened by tying it in for twenty-four hours, the patient will make his water alongside of the guide, the stricture will ulcerate superficially and widen a little, and at the end of that time we will be able to take it out and put in a flexible bougie. This remains in for twenty-four hours and the stricture widens a little more; then we take that out and put a little larger instrument in. We continue to increase the size of the instrument every twenty-four hours, and in the course of a few days we are often able to get a fair degree of dilatation, so that we can continue the treatment with sounds.

Continuous dilatation is seldom used to-day. I do not suppose I use it on a case once in two years, but still I am speaking of it, for if you are in the country you may not be able to get a surgeon and you are able to make the patient fairly comfortable while getting ready to do something else, so it still has its place. The ordinary practice, however, is to take a tunneled sound and slip it over a whalebone guide into the bladder.

We use the tunneled sound in these cases of tight stricture because we are very much afraid of making a false passage, but if we have a track to run on (our filiform guide in the bladder) there is no chance of making a false passage.

The third course which is open to us is immediate operation by external or internal urethrotomy; so to-day for the treatment of these very tight strictures we have two methods only to consider—gradual dilatation with tunneled sounds up to a point where we can use other sounds and substitute dilators, or, in the case of a very heavy, dense, tortuous stricture, immediate operation.

Q. Does a linear stricture have to be dilated?

A. Yes; it often gives trouble so as to need dilatation.

Q. Does it ever need cutting?

A. Yes, sometimes; depending on how tight or narrow it is.

Q. How can you tell whether it is hard or soft?

A. By the feel of the bulb. It will feel hard like a fiddle string or soft like an inflammatory swelling of the tissues.

32 Schermerhorn St.

REPORT OF A CASE OF COMPLETE ALOPECIA ARREATA.

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New York.

J. M., age 8; female; white; occupation, school.

Family History: Negative.

Personal History: The patient has always been well.

Present History: Nine months ago without any known exposure to the same disease, preceding sickness or known cause, the hair on the crown of the head began to come out in small spots.

These spots gradually enlarged, others appeared so that within four months the child was absolutely bald. During this time the eye brows and eye lids entirely disappeared. For the three following months there was a complete absence of the hair of the head and eye brows and eyelids. Since this time there has been a gradual growth of hair. The patient now presents the following picture.

Left Side of Head.

Physical Examination: Two inches above the right eye there is a narrow bow-shaped line of hair which resembles a misplaced eye brow, except that it is longer, being about three inches in length. The hairs are softer than those of the eye brow and they are one inch in length. A second spot three-quarters of an inch in diameter is situated on the right parietal boss. This spot is covered by lanugo hairs one-half inch long. A third very small tuft with lamugo hairs three-quarters of an inch long is situated in the center of the occipital region, just to the right of the median line. The scalp shows numerous minute lanugo hairs, just visible above the surface. The general picture is that of complete baldness.

The eye brows show that one-half of the hairs have returned but as yet have not the normal texture. The mother who brought the child to the clinic today for the first time states that no treatment has been employed—February 2, 1915.

Since March 5, 1912, when the patient first came under observation, there has been, in spite of neglected treatment which has been almost nil, a gradual improvement and we now have the following picture; Below and back of a line extending around the back

Illustrates Recovery of Hair After 10 Months Growth.

of the head from a point two inches in front of and three and one-half inches above the lobe of the left ear to a point one inch directly above the lobe of the right ear there is, except for a very few lanugo hairs, a complete baldness. In front of this line, except for a round area one and one-half inches in diameter whose anterior border is situated one inch back of the median line of the forehead over which area the hair is very thin, there is a good growth of fine hair which is eight inches in length. This hair the patient can so arrange as to cover the remaining bald area. The eyebrows are still entirely absent. The lower left eye lid has en-

Right Side of Head.

tirely returned; the lower right, the upper right and the upper left eye lids have only about one-half of the hairs fully developed. The accompanying illustrations were taken November 12, 1912.

133 East 57th Street.

SHOULD TONSILS ALWAYS BE REMOVED WITH ADENOIDS?

HAROLD HAYS, M.D., F.A.C.S.,
New York.

The specialist frequently has children referred to him, particularly by pediatrists, with the suggestion that the adenoids be removed. Advice often accompanies the little patient to the effect that it would be well to remove the adenoids only—without an anesthetic.

What attitude should the specialist take in these cases?

I have often expressed the opinion that tonsils are of great value in infancy and early childhood. They apparently tend to ward off a great many infections, but as a result of their constant use they frequently become diseased at an early date and therefore cannot perform a normal function. The evidence of their diseased condition may be ascertained by noting the size of the tonsil, the diseased condition of the crypts which often contain cheesy debris, the enlargement of the glands underneath the jaw, and the constant presence of mucus in the nasopharynx, accompanied by mouth breathing. When all or any one of these conditions are present, the removal of the adenoids alone will not be sufficient, and within a short time, perhaps in a few months or a year, the tonsils will have to be removed.

It is safe to say that it is unwise to remove the tonsils at the time when an adenoidectomy is performed, in children under two years of age, unless there have been repeated attacks of tonsillitis or unless the tonsils are sufficiently large to cause an obstruction in the throat. One is wise, however, to state to the parents that sooner or later the tonsils will have to be removed, for in the majority of instances the irritations or infections which give rise to the growth of adenoid tissue also have a tendency to hypertrophy and disease of the tonsils.

If the child is about two years of age when the adenoids have to be removed, even if the tonsils are not seriously diseased, it is perhaps better to remove them, particularly if one believes that later on their removal will be necessary. I am very much against submitting a child to two operations where one will accomplish the same result and do the child no harm. No one knows just what the function of the tonsils is, and it is yet to be proved that the removal of the tonsils at this age ever interferes seriously with the child's health. If we take the general run of cases into consideration one is justified from a large experience in stating that more children are benefitted by having their tonsils removed at the time when the adenoidectomy is performed than would be benefitted if the adenoids alone were removed. At the New York Eye and Ear Infirmary about 1,500 children are operated on for tonsils and adenoids each year, and in looking over the records of cases for the past six years I have found that the tonsils have invariably been removed where even the smallest vestige of a tonsil was present. I feel very sure that none of these children has physically been impaired and conversely I feel very sure that if the tonsils had not been removed at the time of the adenoid operation it would have been necessary to operate upon them later on. As long as the removal of tonsils after two years of age apparently does no harm, and as long as it is frequently necessary to remove the tonsils later on when nothing has been done to them at the first operation, the only wise thing to advise is that both operations be done at the same time.

11 West 81st St.

TUBERCULOUS GLANDS OF THE NECK; OSTEOMYELITIS.

From the Surgical Clinic of
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History: Patient, male, ten years old, enters the hospital because of a swelling on the side of the neck. The mother has noticed this swelling for the past year; it began as a small nodule and has increased in size and seems now to be composed of a number of nodules forming a mass. Two months ago the mass became swollen and red and the boy had a fever. This subsided in a few days and left one of the nodules quite soft.

Examination: There is a nodular mass on the left side extending from the angle of the jaw to the clavicle. In the center of this mass is a softened area which fluctuates, about the size of a twenty-five cent piece. The tonsils are somewhat enlarged. Temperature is normal.

Comment: Tuberculous glands of the neck is one of the most common affections of childhood. It will be recalled that the neck is one of the most important lymph stations of the body. Not only is it rich in lymphatic glands, but these glands stand guard over more gateways of infection than those in any other region of the body.

The cervical lymph glands drain not only the regions in which they are situated, but also the head, face, nose, mouth and throat. Again, the importance of the lymphatic system in the child, and the predilection of the tubercle bacilli for lymphatic tissue explain the frequency of this affection.

How do the tubercle bacilli get into the glands?

They emigrate from the mucous lining of the mouth, nose, pharynx, to the neighboring lymph spaces and are finally lodged in the filter stations of the lymph apparatus—the glands, which become the centers of inflammatory reaction. Hence, the gland enlarges, there is the formation of typical tubercle, the inner structures break down, and the gland is converted into an abscess inclosed in the denser gland capsule, which in turn breaks down and the pus slowly pushes its way to the surface, discharges, and leaves fistulous tracts. In some cases the cheesy glands remain encapsulated, become calcified, but harbor for a long time the infectious material.

Diagnosis: Remember that tuberculous adenitis is extremely common in childhood. It is most frequently observed after the fifth year. The child is usually in fair health, and is brought to the physician because the parents have observed a painless "lump" in the neck. This "lump" may be a single enlarged gland which rolls freely under the skin, or it may be formed of several glands making a considerable mass as you observe in the patient before us to-day. Note that these enlarged glands are found in typical locations corresponding to the typical arrangement of the lymph glands—such as in the submaxillary space, along the inner border of the sternomastoid, in the carotid region, etc. (Fig. 1.)

The diagnosis of tuberculous glands of the neck is generally extremely easy. Remember that *tuberculous glands of the neck are by far the most common tumor of the neck in childhood, and the most frequent cause of abscess.*

Again, note their chronic course, and their tendency to softening and pus formation. Fortify the diagnosis

Fig. 1.—Bilateral Tuberculous Glands of the Neck.

by correlating the primary focus usually found in a pharyngeal tonsil (adenoids), enlarged tonsils, chronic otitis media, dental caries, etc. These are the most frequent gateways of infection.

Treatment: As in all tuberculous lesions the treatment should be directed toward improving the tissues so that the tubercle bacilli will cease to thrive. This will be accomplished by proper nutrition, unlimited sunshine and fresh air. Local disinfection of the mouth, teeth, nose, and pharynx, should not be neglected. *Under proper hygienic treatment many cases of early tuberculous adenitis will recede and operation be avoided.* The local application of iodine or other medicaments is the merest folly, since it in no way influences the course of the disease.

If the gland is softening and suppuration is present, a small incision should be made under strict antiseptic precautions, the contents evacuated, and a small rubber drain inserted. *No curetting should be done,* since it only opens the way for new infection, and the less the interference the more rapid the healing.

When persistent and large glandular masses are present, operative treatment is indicated.

Operation: We endeavor to plan the incision so as to give the greatest exposure with the least resulting scar.

We have found the Z-shaped incision gives a satisfactory exposure; places the horizontal incisions in the natural folds of the neck, and the vertical incision behind the sternomastoid. (Fig. 2.) Thus a fairly good cosmetic result is obtained. We rapidly dissect up the skin flaps and retract them away from the operative field. You observe that the mass is now exposed to view; and further, that the palpable enlargement is no index of the extent of involvement. Here we have a nest of tuberculous glands extending along the internal jugular vein even as far as the clavicle. We dissect away not only the enlarged glands, but the entire glandular chain. The operation is somewhat formidable as you observe the intimate connection between the diseased glands and the great vessels. It requres an exact anatomic dissection. The procedure should be conducted with deliberation and with careful attention to hemostasis.

We have now cleaned the entire field, not only re-

moving the diseased mass but the entire glandular chain adjacent to the internal jugular vein.

The skin is sutured with horsehair and a fine needle to give as little resulting scar as possible. A rubber tissue drain is placed in the lower angle of the wound to be removed in forty-eight hours.

Comments on the Operation: Remember that if the operation is attempted the removal of the glands must be radical; a partial removal of the larger lymph nodes is useless and is followed by immediate recurrence. There must be extensive incisions and thorough exposure of the parts so that the extirpation may be

Fig. II.—Line of Incision for the Radical Removal of Tuberculous Glands of the Neck.

complete. Only a resourceful and experienced surgeon should attempt it.

Though the operative technique is difficult and the procedure a long one, it is remarkable how speedy the recovery, and how satisfactory the results.

These patients are usually out of bed the day after the operation, and healing is complete in a week.

OSTEOMYELITIS.

History: Patient, male, thirteen years old, enters hospital because of severe pain and swelling in upper third of left tibia. The previous personal history is negative until four days ago when he was suddenly seized with intense pain localized near the head of the tibia. The pain was excruciating and aggravated by the slightest movement. The pain was followed by a severe chill, high fever and delirium. On entering the hospital the patient's temperature is 102, pulse 100, respiration 30. There is marked swelling over the upper third of the left tibia and tenderness over the entire bone.

The leucocyte count is 20,000 and the polymorphonuclear leucocytes are 85%.

Comment: The history tells the story: it is characteristic of no other affection save osteomyelitis.

If you analyzed the history you observe that there is presented here a previously healthy boy *suddenly attacked with intense pain localized near the ends of one of the long bones* accompanied by chills and high fever.

You will also note that the pain presents two characteristics:

(a) *Its sudden onset.* If you ask a patient with osteomyelitis to tell you what day the disease appeared, he will tell you not only the day but the precise hour, so indelibly is the pain impressed upon his memory.

(b) *Its Intensity.* The excruciating severity of the pain, aggravated by the slightest motion or pressure, is comparable to no other pain symptom.

One of the most characteristic symptoms is *loss of function in the affected limb.* The patient is absolutely unable to move the limb in the slightest manner. There is tenderness, sometimes involving the entire bone, but the greatest tenderness is over the inflammatory focus.

It is obvious that since the products of suppuration are confined within an impermeable bony wall, the amount of septic absorption and the symptoms of toxemia are extreme. Hence the pulse is rapid, the temperature high, the tongue dry, the eyes sunken. Delirium, stupor, and coma succeed each other so rapidly that the characteristic local symptoms often entirely escape notice.

Diagnosis: There is something to be said about the diagnosis of this disease which should be said with a good deal of emphasis. With a disease presenting such striking characteristics it may be difficult to explain *why so many cases of acute osteomyelitis are compromised by a procrastinating medical treatment when the indications for surgical intervention are immediate.* As a matter of experience osteomyelitis is often confounded with typhoid fever, acute articular rheumatism, and meningitis. This is true especially of rheumatism.

The explanation is not difficult when we consider that when the doctor first sees the patient, it is usually after the severe initial symptoms. The clinical picture has changed to one of profound prostration with cerebral symptoms. In other words, *the delirium, stupor, and coma have succeeded one another in such rapid succession that the severe initial and localizing symptoms are masked by the profound septic intoxication.*

The picture is now one of septic fever not unlike typhoid, and if a careful history of the onset is not obtained and a careful examination, especially of the long bones is neglected, confusion is inevitable.

Rule: *Every child suddenly attacked with high fever and delirium, about the origin of which there is the slightest doubt, should be carefully examined for osteomyelitic foci.*

Operation: There is only one treatment for osteomyelitis: *radical surgical intervention without delay,* since there is no contraindication to operation when once the diagnosis of acute osteomyelitis has been made. Let me warn you that superficial incisions through the soft parts are futile. *The surgical relief of osteomyelitis contemplates nothing less than an opening in the bone down to the marrow—the focus of infection.* Remember that the pus is in the medullary canal as well as under the periosteum. Hence, periosteal incisions are insufficient. We now make a free incision the full length of the affected part down to the bone. We are of course careful not to sever important structures and to secure perfect hemostasis. We lay the periosteum open the full length of the pathological process. You now observe the pus flowing out as we incise the periosteum. But we have not as yet opened up the focus of the disease—the focus is inside the bone which we now proceed to trephine. As I remove the button of bone you note the pus oozing out of the marrow; this demonstrates what I have already emphasized, *the focus of infection is not beneath the periosteum, it is in the marrow of the bone.*

We now enlarge the opening in the bone by chiseling a groove out of the bone as far as the infiltration of the marrow extends. We now carefully wipe away the pus and provide drainage for the bone cavity.

Question: Do you curette or irrigate the bone cavity?

Answer: Curetting, irrigating with antiseptic solu-

tions, and otherwise disturbing the infected marrow, are to be avoided.

Recall that the internal surface of long bones is lined with endosteum—the bone forming membrane of the internal surface of the cortex. Curetting only destroys the integrity of the endosteum and leads to necrosis of the inside of the cortex.

Another point about the operation which is often neglected. The treatment of osteomyelitis is compromised as much by superficial incisions as by late incisions. Trephining the bone adds nothing to the risk of operation—it may not only save the bone, it may save life.

Remember to interfere as little as possible with the epiphyseal line, especially at the knee. In the lower extremity the increase in length of the bone is greatest at the knee. In the upper extremity the increase is greatest at the shoulder and wrist.

In cases operated upon early (which we regret to note is the exception) before the endosteum is destroyed, there will be no formation of a sequestrum, and the wound will heal by granulation. In the majority of cases (late operation, spontaneous opening, inadequate drainage, etc.) the endosteum has been destroyed, a portion of the bone necroses, there remains a sequestrum, and the disease passes into the subacute or chronic stage, in which is seen the process of sequestration, by which necrotic bone separates and forms a sequestrum—a foreign body—surrounded by a shell of new bony formation, which is perforated by fistulae and continues to discharge pus so long as the sequestrum remains.

When this condition is present it is evident that the sequestrum must be removed, either spontaneously or by operation, and the management of this stage of the disease demands surgical discrimination.

Formerly it was thought wise to wait until the sequestrum was fully movable and surrounded by a dense shell of bone. No one rule of procedure is broad enough to cover all cases, and the surgeon must discreetly select the operation which best fulfills the anatomical and pathological requirements.

394 Clinton Avenue.

A NEW FACTOR IN TUBERCULOSIS.

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Fresh air, rest and nutritious diet are most important factors in the treatment of tuberculosis. But one must consider tubercular patients from the standpoint of resistance. To maintain this or bolster it up when necessary adds another, and possibly the most important factor. Two facts stand out: 1, Ancestral tuberculosis can be found in a great majority, if practically not every case; 2, tuberculous patients display neurotic tendencies with the nervous system below par, in a state of starvation, as it were.

The more resistant a building, and the more fireproof its construction, the less liable is it to ravages of time, climate and fire. The same with the lungs; the more resistance they offer, the less likelihood to bacterial invasion.

This is the theory upon which all serum therapy is based, the serum by stimulation causing the system to manufacture ante-bodies that fight or destroy the invading bacteria. But behind this is a factor that must not be lost sight of, viz., the nervous system, for this is the dynamic force which furnishes resistance, controls and operates the human body in health or disease, and to this system at least a portion of our energies should be directed when dealing with disease. That neuroinidia, or nerve starvation, plays a most important role as a causative agent in lowering of the vital forces, is a condition found in a great majority of cases, but to be positive of the true cause we should, as far as possible, resort to methods which will show clearly and positively whether nerve energy is low, and if normal, whether it is not being used excessively; whether the reserve is not being unnecessarily depleted. For this purpose the phosphatometer, a small, inexpensive and practically reliable apparatus, will show in ten minutes the amount of nerve nourishment present and how it is being used. As Clemesha has remarked (*N. Y. Med. Jour.*): "It is no longer necessary to guess as to whether stimulants or sedatives are necessary for the nervous system, for the phosphatometer will tell you positively in ten minutes, using the second urine passed in the morning." One other consideration, and possibly the most important, after ascertaining the true condition of the nerve cells, is nerve food.

The food of the nervous system is known to be phosphorus, lecithin and nuclein, and must be supplied at all times in sufficient quantities, to not only supply calls for energy, but to keep the reserve at normal. Lecithin and nuclein is best supplied by raw eggs. Phosphorus is all important, but it must be given in its free or elementary state, a condition that heretofore has been most difficult of obtaining, excepting in a very limited amount from hypophosphates or codliver oil. In fact, the seeming benefit obtained from codliver oil, in lung troubles, can be ascribed to the minute quantity of phosphorus obtained from the phosphoric acid contained in this oil. As to elementary phosphorus in various preparations of glycerophosphates, hypophosphates, etc., the *J. A. M. A.*, April 25, 1914, says, "Very little, if any, elementary phosphorus is obtained from these preparations." The use of phosphorus in diseases of the lungs has been most admirably described by such men as Lemon (*N. Y. Med. Jour.*), Smith (*Med. Herald*), Colton (*Iowa State Med. Jour.*), and others, all agreeing that as an adjunct it is the remedy par excellence in all lung conditions.

Realizing the great benefit derived from elementary phosphorus in tubercular, nervous and various other conditions, the writer has formulated a mixture containing free phosphorus in combination with tincture of nux vomica, extract of cannabis indica and tincture of ignatia. This formula has given brilliant results, and is commended to the medical profession. Every 30 minims, a medicinal dose contains: 20 drops nux, 8 drops ignatia, 1-3 gr. can. ind., 1-100 gr. free phosphorus, and the dose is 30 drops in milk one-half an hour after meals. I call this combination compound phosphorus tonic (Dowd).

For Corns.

Gaucher recommends the use of the following paint, which, he states, will remove the most inveterate corns:

℞ Resorcini,
Acidi Salicylici .....ana gr. xv
Acidi Lactici,
Collodii flexilis .....ana 3iiss
Misce. Fiat pigmentum.

"To be applied for five or six days in succession."

The foot is then well soaked in hot water, and the collodion lifted off bringing the corn away with it.—(*Quinz. thérapeut.*)

THE NATURE OF ARTERIOSCLEROSIS AND ITS RELATION TO MENTAL EFFICIENCY AND DETERIORATION.

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In order to understand the nature of the disease known as arteriosclerosis, it is necessary to conceive the human body as an organism made up of cells, each one of which has not only its life as part of the organism, but also its life as an individual.

It is a familiar fact that the cells of the animal body can maintain their life for a time when separated from each other and that they may form new relations to other living cells, and then go on as before.

In the same way, part of the cells of the body may perish, and the remainder of the cells maintain a healthy existence.

There is a degenerative process in the human body, which, on account of its dire effect upon the organs of circulation, particularly the blood vessels, has been called "arteriosclerosis." This disease involves more or less, all the structures of the body, and is a disease of the cells, on account of which they may be destroyed and replaced by scars. It is easy to see how, when the natural cells of the body are destroyed and their places are taken by a harder material known as connective tissue, that we have a hardening and shrinking of the organs.

The cause of this "death of the cells" is often enough a poisoning of the body by the products of abnormal chemical processes taking place in the food, leading to auto-intoxication.

But more often I believe it is due to a change in the cells of the body themselves, brought about by nervous shock or strain, by a severe illness or an acute poisoning, after which period the cells no longer react properly to food which should nourish them. It is not that the food is poisonous in any way, any more than it was before, and it had not been poisonous all their lives to these people, but a change has taken place in the persons themselves, on account of which they react in a poisonous way to their food.

A similar observation is easily made by laboratory experiment, when the albumen of egg injected into the flesh of a guinea pig will cause the animal to be sensitive to white of egg, and at a subsequent time a single dose may lead to the death of the animal. This phenomenon is known as anaphylactic shock.

When a business or professional man is subjected to great strain and worry, he becomes sensitive often to the proteins of meat, eggs or fish, and when he goes on eating them the same as he did under happier conditions, a less sudden but equally serious change takes place, and some of the cells of his body are destroyed, the man begins to suffer from damaged organs, most conspicuously the heart and blood vessels. Very soon he is told that he is suffering from arteriosclerosis, with high blood pressure, angina pectoris and everything that goes with the breaking down of the high pressure worker.

The cells of the brain are not often affected directly in this process, but indirectly. The high blood pressure and poisoning from poorly functionating organs and the lack of reserve strength lead to impairment of mental efficiency and a deterioration of the man's ability. Of course, if such an accident as the rupture of a blood vessel in the brain happens, then there is a very striking diminuition of mental efficiency, though often enough it takes the form of an increase in the emotions rather than in impairment of judgment.

The points which I wish to make are:

1. That arteriosclerosis is a general disease which secondarily involves various organs.

2. That it is due to poisoning by food or bacterial products, but that it is usually a poisoning that is caused by a change in the individual by which his cells are caused to react in an abnormal manner to what are customary and even normal material for the nourishment of the cells.

3. That mental inefficiency and deterioration are the indirect result of the impairment of organs upon the brain, rather than a direct instance of brain damage, except when the disease has gone on to the impairment of the circulation in the brain. The former is more common than the latter, though the latter is more striking.

The fact that deaths from cardiovascular disease have increased 100 per cent. in thirty years (which leaves out of account any estimates of the years of impaired mental efficiency) makes it important to consider some means of preventing so great a loss. This may be brought about by a recognition of the probability of the onset of the disease arteriosclerosis after severe illnesses, periods of mental strain and worry, or the impairment of digestion through burdening it by a great quantity of food. But above all by the institution of the custom of the periodic examination of supposedly healthy people to detect in an early stage this sensitiveness to damage by natural foods and the discovery, under these circumstances, for each individual his proper diet and mode of life.

54 West 55th St.

*Read before the American Association of Medical Jurisprudence, May 2, 1914.

CONTRACT PRACTICE FOR THE BEGINNER.

N. P. BROOKS, M. D.
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As the time for graduation approaches many of those who are to be awarded their degree of M. D. after four years of hard study are wondering where they can turn to earn the money to meet their debts. Some are free to take the internships in the general hospitals. They are fine places but as they do not pay a salary are not places for one who finds an immediate need for money on graduation. To go into practice at once means little to do for some time unless one is very fortunate in a location; it also means a loss in general experience, for in a small community where the work will pay from the start, the work is likely to be narrow and the whole life tends to a restriction of one's ability which is not good for the future development.

When nearing graduation my thoughts first turned toward the army. To my disappointment I found that it took only men who had general hospital experience or its equivalent and that even then the requirements were very rigid. This also held good for the navy and the Public Health Service. There is always a demand for men in the different state insane hospitals and prisons and in the private sanitaria and these are salaried positions, but of little value for practical experience, unless one plans to follow such as a life work. The opportunities which offer combined salary and experience are meagre and generally mean living a rough life in a small place away from the delights of civilization. In my career I tried three different branches and found much of good in all both in helping me as a physician and as a man.

My first venture was with a large coal mining company in old Mexico. I was fortunate enough to get a place immediately on graduation. As I knew no Spanish, I was sent to a small outlying camp where I had full charge of the medical work of about 500 people. The life there was the usual rough camp life with little work and no amusements except those one could devise for one's self. The only other English speaking person was the local superintendent, who was a Scotchman. I remained there only three weeks or just long enough to pick up a few of the most necessary words and expressions. I learned also that if I was to obtain experience of value I would have to dig it out on physical examination as I was unable to get any history. It also showed me that I would have to acquire a working knowledge of the language before I could hope to do much except with accident cases. With such an incentive I worked hard on the language so that in six months I could ask nearly all the necessary questions in such a way as to be understood without difficulty. During the first six months I was shifted about considerably, being sent to the other camps to help when the work had become too heavy or some epidemic had broken out. I served in one camp where there was small-pox, and in another with typhoid. In this way I met the other physicians working for the company as well as nearly all the English speaking employees of whom there were about 100, a truly cosmopolitan crowd. On the medical staff alone we had a Mexican, a Japanese, a Canadian graduate of Guy's Hospital, London, as well as men from a half dozen medical colleges in the States. Working with such men in this way was of great value. While some of the types of disease met with were not such as would prove of practical benefit to one who expected to practice in the North, I still found that some of the same ailments were identical with ours. The practical experience in accident surgery is most excellent, for during my stay of three years, I had to treat the fracture and dislocation of practically every bone in the human body. I had to alone amputate an arm at the shoulder under morphin as the only available anesthetic. With the help of my druggist who gave chloroform I amputated a leg, a hand at the wrist, and several other operative conditions as extensive. The physicians who cared for major surgery learned that as soon as they were able to explain the need for such operations, there were a good many opportunities for abdominal and other operations.

In practise it taught us to be more careful observers and to make our diagnoses by the careful study of the patient, as we had very few of the finer aids. There being no laboratory convenient it was often hard to get the drugs we had been taught to use in certain conditions so we had to employ those at hand. This was also true in the surgical work. I spent a year in one camp which had between 400 and 500 working men. Ten leagues beyond was a town of 600 people to which I was the only physician. The nearest physician was 15 miles away. I was my own druggist and orderly, and had to even make my own bandages and dressings.

After two years in Mexico I came North, took my State board examination, intending to take up private practice but, owing to ill fortune, found it necessary to go back to contract work once more. Before I received my state license I accepted a place on the Ashokam, N. Y., aqueduct. It was not as interesting as mine work nor as valuable a teacher in medical and surgical experience, but as some large filter plants were being built it was very instructive in sanitary engineering. The camps were modeled on army lines. I had the general supervision of the incinerating plants and gained a very good working knowledge of sewage and garbage disposal. I stayed until winter and then accepted an offer from a Porto Rican sugar mill, going to the Island in January. I found the work there much like that in Mexico. I had a good opportunity to do outside work as there was very little to do in connection with the Central. I treated many cases of hookworm disease, elephantiasis, malaria and other tropical diseases. When my six months' contract expired, I returned to Mexico, where I remained until the conditions became so bad that all mining operations were either stopped or very much curtailed. I was there during the Madero revolution and part of the Orozco uprising; while not in the center of the hardest fighting there were a few small skirmishes near us and I treated a few of the wounded. To summarize, I worked four years in contract practice in camps of varying sizes, during the greater part of which time I had all the medical and surgical practice one man could care for. I treated all kinds of injuries and diseases, many of which are very rare in the North and only seen occasionally in the large general hospitals like Bellevue. The meeting of diverse and unusual conditions kept my interest very much on my work and prevented it from becoming monotonous and I did not miss the many refining elements that go to make up the average community in the States. I had a training in self-reliance that would be hard to equal in any other field as I learned to do with what I had at hand until a better method could be devised.

This has some drawbacks in private practice as I find myself a little slow in remembering that I am now within easy call of consultants. There is, however, one very serious aspect of such a life unless the one who elects to follow it has traveled some before; the free and easy life is likely to be demoralizing. There are few restraints, the majority of the men one is working among are doing hard and dangerous work; they are rough, uneducated or reckless. Their daily work calls for constant risks and their pleasures are very apt to be what here would be called at least loose.

Financially I found it profitable. During my first two years in Mexico I paid off all my debts and accumulated a stake that seemed ample to set up in private practice in the country in the States. I feel that I gained much of value to me as a physician, aside from a good living, while I traveled much and made some very interesting friends.

I shall feel repaid if this gives some prospective young physicians a few ideas which may prove of value.

Treating Soft Chancre with Argyrol.

Ravary (*Jour. d'Urol.*, vol. 4, No. 6) describes a case of soft chancre, causing a deep ulceration at the lower commissure of the meatus. Many Ducrey bacilli in the discharge; Wassermann reaction negative. Cauterization, calomel ointment, iodoform, hot applications, all proved unavailing. Finally a bit of gauze, saturated with 20 per cent. argyrol was placed over the ulcer and held in place by means of the prepuce, being renewed after each micturition. The results were surprisingly good. The ulcer was almost dry twenty-four hours later and completely healed within five days. In two similar cases, one of them a mixed infection, the results were nearly as good.

Congenital tuberculosis is exceptional.

The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

ACIDITY—A STUDY OF CAUSE AND EFFECT.*

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During the latter half of the seventeenth century a spirited controversy was carried on relative to the functions of acids and alkalies in health and disease. Headed by Sylvius, the iatro-chemical sect was launched and attained popularity for a time, but soon lost repute and was completely overthrown early in the eighteenth century, principally through the teachings of Hoffmann, a name which has been handed down to modern times through his anodyne. Prominent among the followers of Sylvius should be mentioned Willis, the celebrated English anatomist, and Glauber, the discoverer of Glauber's salt, although there were others less conspicuous, both in England and on the Continent.

The name itself is not only suggestive, but descriptive, inasmuch as the theory combined external applications with internal medication, the object being to counteract acid or alkaline acridity, one or the other being regarded as the climax or culminating point in all disease.

This legendary item is introduced for the purpose of calling attention to the historical evidence bearing upon the subject—because we have made so little progress during the past two hundred and fifty years. In fact, while physicians generally are thoroughly conversant with the normal reactions of the body fluids and tissues in health, and fairly well grounded on the abnormal reactions in disease, not one in a thousand has the least conception of the effects incident to the chemic deviation known as "acidity." For the most part, the study of acidity is confined to the stomach contents, no inquiry being made as to the constitutional effects, direct and indirect, immediate and remote. While the possibility of functional derangement incident to an excess of acid is admitted, the remote effects in the form of organic disease are entirely overlooked, a notable illustration of this being found in the case of nephritis (Bright's disease).

In this study it seems the part of wisdom to confine the discussion to those elementary principles which are well known and universally recognized by chemists and physiologists. For example, when we wish to learn about the probable causative factors, we should examine into the character of the usual or ordinary dietary. This subject has been so thoroughly covered by the investigations of Langworthy (Food Customs and Diet in American Homes, Washington, D. C., 1911), that the following quotation will be quite sufficient to show the origin or source of acids in the human economy.

Estimated Amount of Mineral Acids.

(Required per man per day.)

	Grains	Grams
Phosphoric acid (P_2O_5)	45 to 60	3 to 4.0
Sulphuric acid (SO_3)	30 to 52.5	2 to 3.5
(Chlorin (Cl)	90 to 120	6 to 8.0)

The reason for adding chlorin will be understood when we come to study the therapeutic effect of calcium chloride as compared with other calcium salts, such as the carbonate, phosphate, sulphate and lactate.

In studying the chemistry of the Porto Rico soils, Dr. Oscar Loew, of the Agricultural Department, finds that the acidity interferes with crop growing. This clay soil, it seems, contains both aluminium and silica in considerable percentages, and in order to secure a normal yield it is necessary to add lime, but it requires at least four tons of lime to the acre to neutralize the inherent acidity of the soil—to raise a full crop an additional two or three tons are demanded, and that is substantially what we must do in the case of disease, because acidity is always the inherent complication.

This fundamental principle will be developed more in detail in studying the effects of acidity—and the demand for lime in excess of the daily intake. It is my belief that this is well illustrated in the case of pellagra, where both silica and aluminium have been assigned as causative factors. Allesandrini and Scala have renounced their theory of microbic infection and written a book to confirm their claims that silica is responsible for this disease. The fact is that both silica and aluminium have an affinity for magnesium, and since *magnesium infiltration is probably the cause of pellagra,* we can demonstrate our contention by the administration of lime salts in excess, precisely as they neutralize the acid soils of Porto Rico.*

Returning now to study the probable effects of an excessive acidity involving the stomach, it must be apparent that the condition is not confined to that organ alone—it involves also the intestinal digestion, interfering with the manipulation of carbohydrates, leading to fermentation and decomposition. Besides, we must bear in mind that it also affects the lymph-glandular apparatus and the blood, impairing the lymphocytic function of the former and diminishing the oxygen-carrying capacity of the latter, thus leading to the condition known as suboxidation.

The function of mineral acids is not well understood, at least, not from a therapeutic viewpoint. Thus, the hydrochloric acid found in the stomach must be derived from the ingested chlorin—it is essential in perfecting the proteolytic ferment. Phosphoric acid is quite as important—it is instrumental in maintaining normal metabolism, through its influence upon the nervous system. Sulphuric acid is not without its special advantages, since it promotes or controls in a measure the transportation of the calcium salts and may be frequently employed with marked benefit in the treatment of atheromatous conditions, such as arterio-sclerosis.

This apparent digression is necessary as a preliminary to direct attention to *a condition in which acid is not contraindicated,* as in the case of intestinal indigestion—referring to the employment of the lactic acid bacillus in the treatment of intestinal fermentation and acute bowel troubles, such as are met with during the summer solstice. It might be inferred that the administration of this ferment and the coincident formation of lactic acid in the intestine would be attended with untoward effects—and that this is not the case is due to the fact that the lactic acid combines with the calcium salts in the intestine, forming calcium lactate, and it is this chemic change which enables these patients to make a prompt recovery. In the early stage of intestinal disorders, the effects are little short of magical; later in the disease, unless calcium salts are added, the effects are scarcely perceptible, owing to calcium depletion, and thus we have cause and effect in juxtaposition. Again, when we permit patients with intestinal indigestion to

* Presented to the sixth session of the A. A. C. R. at Baltimore, November 7, 1914.

eat fruits between meals, the fruit acids combine with the calcium salts, forming the carbonate, and enables us to recover one of the most important elements of the ordinary dietary.

Evidently, *the primary cause of acidity* is traceable to the dietary. Such being the case, it follows that dietetic measures should correct and prevent it—and this is readily susceptible of proof. Secondary to a surcharged acid dietary we have to deal with a multiplicity of functional derangements affecting nutrition—in short, the effect of suboxidation.

Symptoms of Acidity.—A formidable array of symptoms, subjective and objective, are available in determining the presence of acidity. Among the former may be mentioned acid eructations, with or without nausea; shortness of breath on exertion—and these subjects are unable to hold the breath, say, for half a minute, while those not so affected can hold the breath for a minute and a half to two minutes. Yawning is a more or less common symptom, sometimes the only clue to medication. Malaise is especially notable, more pronounced in the early morning, owing to the absorption of poisonous products from the gastro-intestinal tract during sleeping hours, and also to the suboxidation, with the accumulation in the blood and tissues of sarco-lactic acid and carbon dioxide. Insomnia is usually well marked, the patients waking up about three o'clock in the morning and being unable to get to sleep again for several hours, although there is no pain. In many of these cases there is complaint of waking numbness—the fingers and often the toes seem to be paralyzed. In some instances there is complaint of "cramps" in the legs and tingling in the extremities—all due to imperfect conduction of nerve impulses. There is constipation alternating with diarrhea, and more or less headache as a concomitant. This eventually leads to neuritis and neuralgia, and later to neurasthenia, thus completing the vicious circle. In children and adolescents we find moist palms, perspiration at night involving the head and shoulders, and along with this an offensive sweating of the feet. Catarrh of the mucous membranes is always present, affecting at times the nasal cavity, with the appearance of adenoids, bronchial irritation with cough and expectoration and a capricious appetite. "Nervousness" is a characteristic symptom, and this seems to be justified when we take into consideration the susceptibility of children suffering from acid excess. They "take" nearly everything that comes along and require more or less constant medical attendance both winter and summer.

The objective symptoms are easily demonstrable. Testing the salivary reaction with moist litmus paper, we find an acid reaction, which is abnormal, while the acid reaction of the skin is intense. There is also derangement of the reflexes—testing the knee-jerk will show absent or exaggerated reflex, meaning defective innervation. There is intestinal indigestion, determined by percussion over the ascending colon, and this accounts for the insomnia, the "cramps" and tingling in the extremities, the neuritis, the constipation, the malaise and the hundred-and-one other manifestations complained of. In short, we have to deal with a common pathology—all due to the effects produced by the chemic deviation popularly known as "acidity."

Disorders of the circulation perhaps supply the most convincing evidence; the pulse is small, "quick," and usually the second sound of the heart is accentuated, and along with this we find increased blood pressure. The presence of indican in the urine is a frequent complication, and along with this we have an alkaline reaction of the urine, showing that nature is making an effort to restore the physiological equilibrium by drawing nitrogen in the form of ammonia from the body fluids and tissues to counteract the acidity. An examination of the blood will show calcium depletion together with a diminished alkalinity, a clinical fact which confirms our contention that acidity leads to suboxidation. In children and adolescents we find skeletal defects, such as deformities of the feet in children and spinal deviations in both young men and girls.

The cause and effect being so easily recognized and demonstrated, it follows that we should be able to discover the cause of the cause and this is not an insuperable problem when once we understand the nature of the chemic deviation incident to acidity, calcium depletion with the consecutive substitution by magnesium. Calcium being the stronger base, combines with the acid, and immediately magnesium takes its place, so that normal nucleo-proteids are converted into magnesium nucleo-proteids, which lack the property of imbibition (absorption).

Inability to functionate leads consecutively to suboxidation and eventually, to death of the tissues—as in the case of nephritis, diabetes mellitus and Raynaud's disease. *All disorders of the nervous system* are traceable directly to this pathologic entity, because they are all characterized by acidity, leading to a chemic combination between the colloid nerve structure and magnesium, probably in the form of the oxide—a statement which is readily susceptible of proof by the administration of calcium salts to promote magnesium dissociation according to the law of mass action. And it should be borne in mind that we have to deal with what may be termed an insoluble acidity, because this chemic combination is not influenced by heat, cold, water, exercise, rest, change of climate, baths, electricity, or mechanical treatment and the ordinary dietary has no perceptible effect. This latter observation is pertinent because of the present tendency to administer calcium chloride in cases of acidity, according to Loew, we convert an insoluble into a soluble acidity, and thus make but little headway in correcting the fundamental defect. By means of the carbonate, phosphate, sulphate and lactate we can generally relieve the pressing necessity of the patient and thus secure the desired results—although in most cases occurring in adult life an alterative is demanded, calcium iodide being preferred.

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NOTE.—While reading the proof of this article there comes to hand a copy of the Journal (A. M. A., May 15, 1915, p. 1687), containing an abstract of an article contributed to *The London Lancet*, of April 17th, 1915, by Dr. A. Cencelli, which supplies a notable proof of my contention. This paper is entitled, "New Theories and Investigations Concerning Pellagra," but the author has evidently overlooked my contribution on this topic to *The New York Medical Journal*, under date of Dec. 4, 1909, from which I quote as follows:

"In the opinion of the writer, the underlying causative factor is to be found in magnesium infiltration, a pathological condition in which there is depletion of the lime content of the nuclear proteid, being the counterpart of that which occurs in plant life when magnesium salts in excess cause destruction and death of the protoplasm, since magnesium acts as an insulator, impeding the uninterrupted transmission of impusles."

Cellini's method of treatment was exceedingly simple, if not what might be termed primitive—in his efforts to counteract the injurious effects of silica in the drinking water. Small pieces of lime were placed in the pipes and reservoirs, and the treatment was applied not only to animals in which the disease had been induced, but also to human beings who had been suffering from pellagra for longer or shorter periods of time, and "The results were in the highest degree satisfactory; persons who had been ill for a long time im-

proved and were cured in a relatively short space of time without any change having been made in their mode of life, surroundings or diet."

It will not be out of place to direct attention to a condition—not a theory—which might be termed, "the irony of fate." Within a few miles of Hot Springs, Arkansas—where the government has expended several hundred thousand dollars in making the reservation attractive and where is also located the Army and Naval Hospital, under the supervision of the best medical talent in the service—in the Ozark mountains, we find the Mountain Valley Spring, than which no scientific management could offer greater promise of success in the treatment of this hitherto "mysterious" disorder. Whether studied from the scientific or clinical viewpoint—in connection with our present knowledge of the disease—it is complete, and its employment should not only revolutionize our prevailing theories in this direction, but should enact the rôle of a search-light upon the multiplicity of superserviceable methods now in vogue as routine practice.

The following tabulation has been made up to show the total percentages of the different salts.

Table Showing Total Percentages of the Different Salts.

(Mountain Valley Spring Water.)

Sodium	2.5 per cent.
Magnesium	13.1 " "
Calcium	79.1 " "
Silica	3.7 " "

CONSERVATION AND TRANSPLANTATION OF THE OVARY.

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Boston.

To witness the high handed robbery of the ovaries without offering protest, makes one an accessory to the crime, before or after the fact. Man seems to have assumed authority to mutilate at will by castration, both male and female. The changed conditions observed in the physical and mental character of the male after castration, furnished original knowledge of cause and effect, and probably led to experimental operation for the purposes which became understood by those who initiated the operation. That the womb has psychic influence over the female organism, we may presume, was conceived by the noticeable peculiarities present in the woman during her period of menstruation, her advent to puberty, development of pregnancy, gestation and child-bearing, and the changes consequent upon the climacteric. The uterus attracted first attention; while the ovary, for a long time, evidently has been thought to be only the organ of ovulation and fecundation.

So undoubtedly, earlier operations for the removal of the ovaries were to prevent pregnancy. Up to recently, ovulation has been thought the sole function of the ovary. The uterus was the organ chiefly presiding over all psychic phenomena of sexual origin in the female.

But in the light of modern research we have come to accord to the ovary the chief presiding power through the influence of a so-called internal secretion.

The ovary is the queen presiding over most if not all the functions of all the organs associated with the processes of life through the entire generative system. Her influence and control is far reaching but definite, even to the dominating through the physical forces, mental processes, and a long train of psychic influences involving conditions and evolving problems of most vital import in the field of psychological investigation; even the physiological functions heretofore occult are now opening up to us views that bid fair to establish a rehabilitation of gynecology as a science. The veil into the inner chamber has been rent in twain by the ardent investigators of original clinical research, so that we are permitted to peer into the deeper recesses of the vaults containing as precious knowledge as it has yet been our privilege to acquire. Many speculative possibilities have developed into prima facie probabilities. Theories have developed into facts and practice has become influenced by the result. But there yet remain for us possibilities limited only by our own eagerness and willingness to labor and our ability to find the hidden truths. Much of the material at present spread before us in this age of voluminous literature is to be weighed in the balance. Like the quartz from the miner's pick, it must be broken up and search made for treasure. "All that glitters is not gold."

It is entirely unnecessary that I should attempt to elucidate this subject by rehearsing the method or means by which we have become possessed of this knowledge of the functions of the ovary which is so well known by you of the present time. Clinical research in its many phases has produced its results and literature upon the subject has furnished a bibliography too voluminous for more than passing reference, access to which is not restricted.

Many of my hearers are a part of that vast number of clinicians whose labors and experiences are far in excess of the writer's. My object is to present the subject and if possible awaken in my colleagues such interest as will lead them to put forth the best that is in them to the furtherance of investigation that will prove such as we may hold fast—make certain those yet uncertain beliefs—to explain what now are but theories or disputed points and possibly discover functions hitherto unknown.

The one society more than all others to which we must delegate the burden of proof is the Association of Clinical Research. The thing to me which is passing strange is that it should require scientific education to recognize the value of the ovary, to demand proof of justification of its removal. When I see an ovary fresh from the field of operation, I am wont to exclaim: "Woodman, why did you not spare that tree?" The assumption that any organ or anatomical structure in the normal human organism has no utility is groundless.

I would not, however, be understood as placing the whole burden upon the surgeon. We have done, perhaps, more than any other individual craft to preserve and conserve, to investigate and experiment, and finally learn and teach how conservation can be and is being accomplished. To-day we are having the adnexa intact, —resecting, transplanting and striving in innumerable ways to avoid permanent loss of the ovary or its influence, having learned to recognize health from disease, and to appreciate vital functions. But in the belief of there being yet left opportunity for improvement, and in the confidence that clinical research can furnish us still valuable knowledge, we are presenting these views for what they may be worth.

What are the claims of the ovary to first recognition? It is the primary organ of the generative system. Its initial function is that of reproduction, of ovulation and fecundation.

It controls menstruation, a periodical function; it controls development, as shown by individual growth or arrest of it.

It exerts an influence upon physical and mental processes and sexual processes. These are believed to be controlled by an internal secretion. It may yet lay claim to influence on sugar metabolism.

* Read before the 5th annual session of the American Association of Clinical Research at Chicago, November 8, 1913.

That it is an organ of internal secretion is believed, which exerts influence far beyond our present knowledge and may yet be proved to be endowed with the function of a ductless gland influencing sugar metabolism, in conjunction with the pancreas.

It has great vitality and resistance and recuperative ability, and is less dependent upon its entirety for virility and functionating power than any other organ in the human system. A small section of the ovary, as you know, when properly connected, will functionate physiologically as a whole.

We have yet to prove more conclusively some functions which are recognized but not fully accepted. So much has, however, been accepted and adopted in practice that my plea for conservation may seem belated. Who of modern practitioners sacrifices the ovary, in toto? I wish I could say, No one. But, from personal observation and authentic report, we have yet reactionaries waiting for further proof of the utilities of the ovary; and my appeal to this American Association of Clinical Research is to redouble our efforts to demonstrate beyond reasonable doubt the utilities herein claimed and to establish proper treatment for the conservation of the ovary.

Discussion on Dr. Newton's paper:

Dr. Conklin, Chicago.—I should like to ask how long after the postoperative menopause ovarian transplantation may be done with good results, and if there is any method whereby we may preserve for a long time ovarian tissue for subsequent transplantation. I have had good results in immediate transplantation of small portions of ovarian tissue. I have never had very good results from any of the ovarian preparations or extracts in the market, either in postoperative cases or in atrophic conditions. My idea of transplanting ovarian tissue has been to take a small normal, or what appears to be normal, ovarian tissue and place it in the pelvis, or even outside the peritoneal cavity in the abdominal wall.

Dr. Smith, Detroit.—In the transplanting of ovaries we might give the host a number of visitors she wouldn't care to house. I have advised one late transplantation in which I have taken a part of the broad ligament off, brought the round ligament or Fallopian tube up to the ovary, turning it back like a cuff, tying it and pushing it into the ovary, planting the tube by proper sutures in the ovary.

Dr. Allen, Baroda.—I am sorry I cannot offer any experiences in this line, because the Indian woman respects her organs so much that she positively refuses to have her organs considered at all.

Dr. Askenstedt, Louisville.—As far as I know, the part that the ovary plays in the process of the internal secretion of glands is not as yet fully determined.

Dr. Lindlahr, Chicago.—I am not capable of following Nature's processes and explaining just what different acids and alkalies and poisons are at work, but I find that if we can establish normal acidity inflammations and tumors even can be reduced and overcome without operation.

Dr. Newton (concluding).—A small portion of the ovary conserved within the abdomen seems to retain the power of the organ as a whole. I do not believe that transplantation of the ovary has been practiced as often as it ought to have been. Albee has shown that bone kept for some time can be successfully transplanted. So, I believe, can portions of the ovary when they cannot be had at once. We may sterilize a woman without touching her ovary at all. I resect the tube to the uterus, use a pure string suture for ligature, invaginate and close it, and I don't believe it will ever become patent. In doing a hysterectomy, it is not necessary to disturb the adnexa in the vagina. I have seen results in the use of ovarian extracts just as definite as in the use of drugs. Within a year I had half a dozen cases wherein a portion of the ovaries was left with good psychologic and physiologic effect to the patients. I believe the internal secretion of the ovary controls menstruation. This makes the necessity for conservation and transplantation of ovarian tissues apparent. I believe also that the presence of ovarian tissue in old fleshy diabetic women has a controlling effect on their diabetes.

Seventh Annual Meeting.

The seventh annual meeting of the American Association of Clinical Research will take place in Philadelphia during the week of September 20-25, 1915.

Special Article

Thyroid Insufficiency.

The subject of the internal secretions is splendidly treated in the *Practitioner* of London in its issues of January and February, 1915. Among the contributors in the first number are Profs. Gley, Paton and Vincent and Drs. Hertoghe and Leonard Williams. In February the authors included Sajous, von Noorden, Macleod and Hyslop.

Within the past few years this subject has gained the respectful attention of the medical profession. Ten years physicians scoffed. To-day they have accepted the faith and to Sajous of Philadelphia is due much of the credit for this change of heart.

In the symposium referred to E. Hertoghe of Antwerp presents most comprehensively the subject of thyroid insufficiency, illustrated with 56 plates. In this article without further credit we shall give a resume of Hertoghe's findings.

He believes we can affirm that the thyroid governs the building up of the cells; that is to say, the formation and growth of the tissues; and that it regulates the destruction of the albumen molecule, and governs the processes by which waste material, resulting from the incessant regeneration of the organs, is eliminated.

No cell attains the morphological completeness necessary to the perfect accomplishment of its function, unless it be supplied with a certain essential quantity of thyroid secretion.

The demonstration of this fact is easy. A child suffering from marked thyroid insufficiency, whether spontaneous or as the result of the operative removal of the major portion of the gland, ceases to grow. If he is given extract obtained from the thyroids of sheep he will begin to grow again. If this treatment is suspended there is once more arrest of growth. Thyroid secretion is essential to the growth of each cell, and it is therefore indispensable to the general development of the individual.

The relaxation of articular ligaments is frequently observed in children of arrested growth, who are under treatment with thyroid extract. The ligaments at the internal aspect of the knee-joints are those most frequently affected, with the result that a certain amount of knock-knee becomes apparent. The deformity is corrected, however, as the child grows older. Relaxation of the plantar ligaments in subthyroidic subjects is a frequent source of flat-food. The pain in the tarsus and the heel, which is sometimes complained of by adolescents, corresponds with a certain degree of thyroid insufficiency. The articulations of the thumb and fingers may also undergo abnormal relaxation, and it is frequently possible to bend the fingers backward until they touch the back of the hand. When gloved, the soft and infiltrated hand loses its form, and on being squeezed, conveys the impression of a glove filled with clay. It is possible that very little practice to judge of the degree of thyroid inadequacy merely by squeezing the patient's hand.

After the cell has been in performance of its function for a certain length of time it degenerates. The albumen-molecule breaks up into its component parts, and is eventually eliminated by way of the skin, the lungs, the intestine, and, more particularly, the kidneys, from which it is excreted in the form of water and urea. As long as the function of the thyroid is normal, this process of elimination continues. As soon, however, as thyroid activity is impaired, the products of decomposition cease to be carried off at the required rate, with the

result that they accumulate *in situ* in the form of mucin, fat, and other by-products. The cell becomes clogged with them, and a peculiar, hard edema, which does not pit on pressure, is the result.

It is from this phenomenon that the term "myxedema" is derived, a term used to include all maladies due to thyroid insufficiency. Where the condition is serious, this accumulation of waste products may attain enormous proportions. In other instances it is barely appreciable, and the patient may even be lean to emaciation. The accumulation is, however, none the less there.

If thyroid extract is administered to a patient showing myxedematous infiltration, the accumulation of waste products is immediately attacked, burnt up, and destroyed. The amount of the urea in the urine is enormously increased. The patient loses weight, and this loss is continued until the waste material is completely eliminated. After that stage has been reached the weight remains stationary, even though the dosage be increased. If the treatment be suspended, combustion is retarded, and the weight rises until the earlier figure is again reached.

The two main functions of the thyroid gland are the promotion of cell growth, and the elimination of the waste material which results from the destruction of the tissues. The thyroid gland watches over the maintenance of the organs through the medium of the trophic centers, and it controls the general chemistry of the entire organism. As a corollary to this activity, it may be said that the maintenance of temperature is dependent upon the integrity of the thyroid function. Hypothermia is an almost invariable accompaniment of even the slighter forms of thyroid insufficiency. Such patients, the younger ones more particularly, complain of chilliness of the hands and feet; they never feel warm, even in bed. In pronounced thyroid inadequacy the morning axillary temperature may fall to 90° or lower, and the patient shivers in spite of the clothes with which he seeks to protect himself.

It is probable, however, that the thyroid gland performs functions which are of a nature even more delicate. Its secretion increases the resistance of the organism to infective diseases. A condition of thyroid inadequacy diminishes the plasticity of the blood, and induces a state of hemophilia. This explains the profuse menstruation and the post-partum hemorrhage, frequently of an alarming nature, which are observed in connection with subthyroidic women.

Thyroid inadequacy in children is attended by a more or less complete arrest of the normal processes of growth, together with a varying degree of infiltration, the intensity depending upon the degree of the inadequacy.

In the adult, the lesion is confined to infiltration, the amount of which varies in accordance with the degree of thyroid insufficiency and the duration of the disease. With few exceptions, this infiltration has no tendency to spontaneous regression. Hence, those fortunate instances in which pregnancy is accompanied by resorption of the infiltrates are the more remarkable. The favorable phenomena in such cases are due to hypertrophy of the thyroid, by which pregnancy is accompanied.

Some women are never so well as when they are myxedema *fruste* it appears at a very early stage, and is described as the "eyebrow sign." It lends to the face an expression of perpetual astonishment, and, unlike baldness, the sign is one which it is impossible to conceal.

The form of infantile eczema, commonly known as "milk-crust," yields very readily to a treatment of thyroid extract with arsenic, when the subject is of subthyroidic habit. This also applies to psoriasis and to certain forms of eczema.

The mucous membranes of the subthyroidic subject pregnant. Stimulation of the thyroid function does not, however, continue after the periods of gestation and lactation have passed. As soon as she has weaned her baby, the subthyroidic woman again falls into her former state of lassitude and torpor, accompanied by general infiltration.

The muscular *malaise*, which results from the process of infiltration, is expressed subjectively by pain of a "rheumatoid" character. This must not be confused with so-called "rheumatic" pain. Thyroid extract does not relieve pain in the muscles, ligaments and joints, unless that pain is due to thyroid perversion; in other words, to specific myxedematous infiltration.

Muscular infiltration, which occurs in an extreme form in true myxedema, is present, though in a minor degree, in the slighter forms of thyroid inadequacy. In such patients the pain is generally localized in the back. It is characteristic and pathognomic of this rachialgia that, owing to the chilliness resulting from nocturnal inanition and activity, the pain is more intense at night. It usually settles between the shoulder blades, though pain in the sacral and dorso-lumbar regions is not infrequent. In the latter instances the pain is usually ascribed to utero-ovarian sources.

There are some women who, morning after morning, rise early in the hope that escape from bed will mean escape from pain, and who drag themselves about in as broken a condition as if they had spent the night strapped to a board. Movement and food induce a certain relief in the course of the day, and in the evening, after a good dinner, the pain completely disappears.

Pain in the shoulders and arms is not infrequent, and the patient complains of the difficulty of doing her hair. Or the knees may be affected, patients being unable to rise from a kneeling or sitting position. Pain in the sole of one or both feet is common, and this is significant in connection with what has been said concerning flat-foot and the relaxation of the articular ligaments.

In myxedematous infiltration the nerve-cell is never destroyed in the same way as in hemorhagic foci, and in necrosed patches due to embolism. It merely suffers derangement of nutrition, and of the processes by which waste material is eliminated.

The condition of the nerves is expressed subjectively by neuralgias and by lightning pains of a neuritic type. The patients are able to distinguish between the two classes of pain. Cardiac pains, painful irradiations in the brachial plexuses, anginiform pains, and pseudo-angina pectoris are also complained of.

True myxedema presents a chaos of symptoms; giddiness, a dazed sensation, noises in the ears, headache, migraine, loss of memory, mental confusion, melancholia, loss of consciousness, loss of equilibrium. The sudden falling down, the somnolence, and the fits of coma lend a certain resemblance to the serous apoplexy of Bright's disease, with which the condition has sometimes been confounded. The resemblance is the more striking from the fact that, in true myxedema, albumen is frequently present in the urine.

In benign myxedema, the array of symptoms is by no means so formidable. Of these the most striking are the morning headache, the migraine, the giddiness, the noises in the ears, and the somnolence.

The headache of thyroid insufficiency assumes two forms. Sometimes it originates in the frontal sinuses

and extends over the orbits, always, however, remaining frontal. Sometimes the pain originates at the occiput, and a painful center in the neighborhood of the occipital nerve lends to it the character of a neuralgia. From the occiput it invades the corresponding portion of the brain, and the patient describes the attack as one of migraine. The pain differs from true migraine, however, in this, that it is more intense in the morning, and disappears entirely in the evening after a good dinner.

Patients become so accustomed to this form of headache that they frequently omit to mention it unless asked. They usually ascribe the falling of their hair to incessant headache. The least fatigue, the slightest degree of perspiration, or the faintest draught are sufficient to provoke an attack of occipital headache. Trigeminal neuralgia, provoked by the condition of the teeth, is frequent; and headache above and below the orbits is a common feature of slight hypothyroidism.

Giddiness is one of the most constant and distressing features of thyroid insufficiency. Somnolence is an interesting feature of thyroid inadequacy. Subthyroidic children sleep very heavily, and are not easily disturbed. It is among these that the subjects of nocturnal enuresis are found. In adults, the degree of the somnolence is really incredible.

Melancholy predominates in the myxedematous person and even those with slight thyroid insufficiency are profoundly pessimistic.

Even the bony tissue does not escape the effects of thyroid insufficiency. All surgeons know that, in certain individuals, fractures heal badly or not at all, and it is customary to combat this troublesome complication by by the empirical exhibition of thyroid extract. If these patients are carefully examined, they will be found to show symptoms of general thyroid inadequacy, and this is invariably the case with those who derive benefit from thyroid medication.

A rachitic curve in the tibias is almost invariable in subthyroidic children. That this symptom disappears under suitable thyroid treatment is amply shown by the histories cited in the earlier portion of this article.

The cartilaginous tissue undergoes well marked specific infiltration. The joints of a myxedematous subject are persistently stiff and painful. If the hand is applied to such a joint when flexed, there will be a sensation like the crackling of frosted snow. This is a very characteristic, almost pathognomonic, sign, and is most readily detected in the knee-joint.

The glandular tissues are also subject to the infiltration of their elements and of the connective tissue surrounding them. In thyroid inadequacy the secretion of the sweat-glands is entirely abolished, and the liver becomes appreciably congested. The biliary cells do not adequately perform their function, and, consequently, the bile ducts become choked. We note the amber coloration of the skin.

The scantiness of the intestinal secretions combines with the muscular paresis of the visceral organs to produce constipation of the most obstinate kind. Excessive fermentation and flatulence result, with the usual accompaniments of tympanitis, gastric distension, eructation and rumbling.

Considerable interest is attaching to the changes which take place in the epidermis and epithelium. The epidermis, being insufficiently nourished, desquamates and scales off. There is premature baldness. In benign myxedema the hair is fine and brittle, and tends to premature grayness. The beard is scanty, fine, and ill-nourished.

In all subthyroidic subjects the nails are striated and brittle. In true myxedema they are split and broken. The teeth are almost invariably in a lamentable condition, carious, with receding gums, and coated with a greenish tartar which looks like fat. The gums are red and inflamed.

In all myxedematous conditions the falling of the hair follows a method and sequence which may be regarded as specific. The hair disappears at first from above the forehead; later, it recedes from the nape of the neck.

The scantiness of the eyebrows is a constant sign. In —whether buccal, labial, lingual, nasal, pharyngeal, laryngeal, aural or esophageal—undergo infiltration. It is easy to appreciate the disorders engendered by such a state of things in the processes which control enunciation, deglutition, and hearing. The swelling of the mucosa of the isthmus of the fauces and of the esophagus is sometimes so marked as to interfere with the act of swallowing.

It is well to remember that infiltration of the tonsils sometimes gives rise to considerable hypertrophy of these organs. Chronic painful tonsillitis is frequent in subthyroidic subjects, and there are few of the victims of infantilism who are not affected by adenoid growths

The results of infiltration upon organs of a more complex nature are well seen in the case of the cardio-respiratory system.

Paresis of the heart muscles, paresis of the inspiratory and expiratory muscles of the thorax and diaphragm, painful infiltration of the nervous ganglia at the base of the heart, derangement of the cardiac innervation, infiltration of the substance of the lungs and of the mucosa of the bronchi and bronchioles, are the conditions which obtain in myxedema. The dyspnœa of true myxedema in some instances surpasses description.

The entire gastro-intestinal system reacts very strongly to the infiltration of its elements, whether muscular, nervous, secretory or mucous. Infiltration of the muscular tissues induces peristaltic paresis, leading to retention of waste materials with consequent fermentation and constipation. In delicate subjects with weak abdominal walls, constipation results in ptosis of the viscera, notably of the stomach and large intestine.

In severe thyroid inadequacy there is absolute want of appetite, and the aversion for food is unconquerable. Meat is especially distasteful.

The kidneys appear to suffer comparatively slightly from the effects of thyroid insufficiency. Cases of transudation of albumen are not infrequent, but the albuminuria is very slight. The lesion is in no case very profound, for the albumen disappears after a few days' treatment.

The bladder is very sensitive to the effects of thyroid insufficiency, and there is a constant desire to micturate.

The sexual organs do not properly develop when thyroidal function is disturbed.

Heredity plays a considerable part in the etiology of thyroid insufficiency. It is rare to come across a myxedematous or chondro-dystrophic dwarf, an infantile subject of the Lorain type, or an obese child, whose parents, more particularly the mother, do not show signs of thyroid inadequacy.

In treating cases of thyroid insufficiency it must be recalled that the infiltrates are absorbed and the patient loses weight. He should be held down to a loss of not over 5 ounces a day. Hertoghe advises against more than 15 grains of thyroid extract a day. Children tolerate thyroid well, and one or two tablets may be given daily. They grow very rapidly under the treatment, often as much as from two- to three-fifths of an inch a month.

The method is essentially palliative in its action, and should be continued over a long period of time—a lifetime, in fact. The permanent dosage should be half the amount of the initial dose, and both should be controlled by the weight. As soon as the edema has completely disappeared health is re-established. Assimilation and digestion become normal, and nothing will prevent the patient from putting on weight. This, however, is not a disquieting symptom.

It is expedient to accompany the use of thyroid by a mild aperient. Liquid paraffin is a valuable adjunct to treatment.

The patient may eat everything, meat included. A little sugar should be taken, and no alcohol in any form. Cold baths should be absolutely forbidden. There is little wisdom in robbing the victim of thyroid inadequacy of heat; chilliness is his normal state. As a general rule, the infiltration of true myxedema disappears within sixty days.

Briefly, then, the rational method consists in the use of thyroid extract in small doses; close attention to the weight and the régime; and perseverance in the face of muscular and nervous cardiac pain, should such arise.

San Francisco Meeting of the A. M. A.

I have received a number of letters of inquiry from physicians who will attend the forthcoming meeting of the American Medical Association. I submit herewith three special plans which are being patronized; viz: (1) The Gregory Tours, (2) The McCann Tours, (3) The Pennsylvania Railroad Tours.

The Chicago Medical Society is accepting the services of the Gregory Tours. It leaves Chicago June 17, via Chicago & Rock Island R. R. to Colorado Springs, and from there over the "Scenic Route," arriving at San Francisco June 21. The return route may be made over any road. The plan of the Chicago Medical Society is as follows:

First-class railroad ticket to San Francisco, Los Angeles, San Diego and return. Railroad tickets good for 90 days. Pullman Standard Sleeper to San Francisco, giving an entire section to two persons. If two persons occupy one berth there is a reduction of $10.00 on the two Tours. Transfer of member and checked baggage to and from Hotel at San Francisco. Seven consecutive days at the Hotel Plaza or Bellevue in San Francisco, (only two in double room), including seven breakfasts. Seventy-five per cent. of rooms with private bath, those making first reservations having first choice. Seven admissions to Panama-Pacific International Exposition. Admission to twenty attractions with the Exposition Grounds. Trip to Chinatown with Guide Escort. Steamer Trip (4 hours) San Francisco Bay, viewing the Golden Gate and Exposition Grounds. Key Trolley Trip (7 hours) through Oakland, Alameda and Berkeley, visiting the University of California, famous Greek Theatre and Idora Park. Trip to Mt. Tamalpais (8 hours) on the "Crookedest Railroad in the World." The total expense of this Tour as outlined is as follows: Tour "A" Plaza or Bellevue Hotels. Chicago, $141.00; St. Louis, $135.00; $17.50 extra railroad fare to return via Northern Route.

To those who buy their own railroad ticket and want accommodations at San Francisco, June 21-28, including all features as outlined above, the price will be $65.50. Rates from different railroad points will be furnished on request.

Each reservation must be accompanied by a deposit of $10.00 and $10.00 additional in thirty days, same to be retained by Gregory Tours as "reservation rights" payments. Balance to be paid thirty days before departure.

Make all checks payable to Gregory Tours Co., Lytton Bldg., Chicago, sending same to Dr. R. R. Ferguson, 3923 No. Keeler Ave., Chicago, who has charge of reservation.

The tour system of the Pennsylvania Railroad is being operated in the interest of the Pan-American Medical Congress, which meets in San Francisco June 17-21; also the American Medical Association meeting, which follows immediately thereafter.

The fares given below cover round-trip to San Francisco, going on special train as indicated and returning via direct routes; Pullman accommodations (one double berth) from starting point to San Francisco. All meals in dining car will be on the a la carte basis and will be at individual expense. New York, $128.40; Philadelphia, $123.30; Baltimore, $116.05; Washington, $116.05; Harrisburg, Pa., $113.65; East Liberty, Pa., $102.55. Proportionate rates from other points. Extra charge for drawing-rooms and compartments. Over and above regular Pullman berth charge: One person in drawing-room, $45.00; two persons in drawing-room (each), $13.50; three persons in drawing-room (each), $3.00; one person in compartment, $32.50; two persons in compartment (each), $7.25; one person occupying whole section, $14.40.

Two railroad tickets will be required for the exclusive use of a drawing-room, and one and one-half tickets for the exclusive use of a compartment.

For additional information and booking on either the "Pan-American Medical Congress Special" or the "American Medical Association Special," application should be made to Dr. H. L. E. Johnson, Chairman Transportation Committee, Pan-American Medical Congress, 1821 Jefferson Pl., N. W., Washington, D. C.

The following is from the *Journal* of the American Medical Association: "The New York and New England Special will be under the management of McCann's Tours. The itinerary is planned to provide a fast schedule over an interesting route for the outward trip, leaving eastern points as late as the afternoon and evening of June 16, and getting to San Francisco on Sunday evening, June 20. The return trip will be made in a leisurely manner over an interesting scenic route, including a trip from San Francisco to Portland by way of the Shasta line. Stops will be made at Portland, Seattle and Spokane, and a five-day trip through the Glacier National Park is planned. The itinerary as has been noted, contemplates leaving New York at 2 P. M., June 16, over the New York Central lines, thence by way of the Chicago, Milwaukee & St. Paul, the Union Pacific and Southern Pacific to San Francisco, where the party will stop from Monday, June 21, to Friday, 25, leaving San Francisco at 8 P. M. on the last-named day. From Wednesday, June 30, to Sunday, July 4, the party will be in Glacier National Park, returning to New York on Thursday, July 8.

Those who do not find time or are not disposed to return by the route indicated, may arrange to take the special train to San Francisco, and to return within three months after the date of starting, by an authorized route selected.

I suggest that you make your reservations now, if you have not already done so.

J. Rawson Pennington, M. D.,
Chairman, Committee on Transporation and Place of Session.
Chicago, Ill.

Public Health

Save 10,000 Lives a Year.

That the State of New York can save 10,000 lives annually and reduce the death rate as low as, if not lower than, that in New York City, is the keynote of the letter from Dr. Hermann M. Biggs, State Commissioner of Health, to Governor Whitman transmitting the thirty-fifth annual report of the Department.

"The State Department has set for itself the task of saving 25,000 lives within five years," says Dr. Biggs. "The question now is simply, whether the Legislature will provide the funds necessary to secure this saving. The amount required annually is not more than two or three per cent. of the sum which will inevitably be lost to the State unless the experience of the past is definitely changed."

Dr. Biggs says that to save these lives requires simple measures in the main. They are difficult in their application to large masses of the population only because they involve public health education. He quotes the motto of the State Department: "Public Health is Purchasable. Within Natural Limitations Any Community Can Determine Its Own Death Rate."

"This is as true when applied to the State as a whole as to any individual community within it," says Dr. Biggs and he points out that not only can 10,000 lives be saved annually but that this means that 100,000 cases of serious illness can be prevented, with all the economic loss involved in payment of physicians and nurses, the cost of medicines and special foods and supplies, the suspension of wages and decreased efficiency, lowered vitality and mental and physical suffering.

As to the money saving involved, Commissioner Biggs says that $2,500 is a conservative estimate of the value of each life thus unnecessarily lost, and $50 is a conservative estimate of the emergency expense for each case of severe illness. This makes "A total loss in this State of $30,000,000 a year in preventable disease," says Dr. Biggs, "and this estimate takes no account of the vast increase in the economic efficiency of the people of the State, which is possible through the fostering of greater healthfulness in all communities."

As evidence that this can be accomplished Dr. Biggs points out the results of efficient health work in New York City.

"What practical man of business twenty-five years ago would have believed that 50,000 lives a year could be saved in New York City by health measures? Yet this result has already been accomplished. The financial authorities of New York City were sufficiently broad minded and farseeing to trust to the judgment of experts, and with the aid of numerous voluntary agencies the result has been achieved."

The commissioner points out that this saving of life can be brought about not merely in the early period of life but in the period beginning at 45.

"The diseases of the heart and blood vessels, the kidneys and the brain," he says, "which are peculiar to the middle and later periods of life and which would seem to have been rapidly increasing in recent years, are most insidious in their onset and development. The affected individual is often quite unconscious of their presence until measures intended for their arrest are no longer promising. A broad field of the greatest usefulness is here open to the sanitary authorities, which has thus far been almost untouched.

"We are convinced that at least five years may be added to the average lifetime of each individual reaching the age of forty-five (the period of greatest usefulness and productiveness) by the subsequent proper guidance and protection of his life activities, at no cost of efficiency, but on the contrary, with a distinct average increase."

Some Startling Figures.

It is a startling statement recently made by Prof. Irving Fisher of Yale University, who is chairman of the reference hygiene board of the Life Extension Institute: Of 2,000 New York bank clerks subjected to physical examination only 3 per cent. were found to be free from physical impairment or dangerous habits; although their average age is only 33 years, 13 per cent. of these young men and women had hardening of the arteries, 5 per cent. had organic heart disease, and 28 per cent. had kidney disease. The Institute is endeavoring to raise the averages of human life by education along the lines of systematic periodical physical examinations, by which the individual may find his weak spots and by dieting, physical exercise, medical treatment or other forms of personal hygiene overcome these handicaps.

This system was adopted at the Mudlavia Sanatorium at Kramer, Ind., several years ago, where its efficiency, both in education and results, has been clearly established. They take the logical stand that a man's annual physical inventory is of much more importance than an annual inventory of his commercial assets, chiefly because the success of his business depends upon his health; that while an examination is necessary to intelligently treat disease, it gives the patient information that he should know, that he may himself assist in regaining health and be able to keep his physical condition normal after it has reached that point; that it affords absolute protection from contagious diseases, which every well-guarded sanatorium does not accept and which might be imposed upon it but for this examination. Making this the basis of the treatment, Mudlavia has not only been successful in its own work but it has done much to educate the laity to the value of this modern essential.

Industrial Accidents and Child Labor.

With regard to accidents among children there is no hour of maximum. Accidents occur at all times, and they are comparatively much more frequent among children than adults. The United States Bureau of Labor reported that "there is clear evidence of great liability to accident on the part of children. Though employed in the less hazardous work, their rates steadily exceed those of the older co-workers, even when in that group are included the occupations of relatively high liability." This was said with regard to the Southern cotton mills, but the same thing is true of practically all industries in which children are employed.

The results of these accidents come to the physician. We are devoting much time to the prevention of disease, and we should be ready to give attention also to the prevention of injury. Virchow used to say that the ideal function of the physician, besides that of reliever of human ills, is to be the attorney of the poor for the prevention and relief of social ailments, and, above all, the prophylaxis of their physical consequences, whether in lowered health or in maiming injuries.—(*J. A. M. A.*, Feb. 6.)

Distressing thirst after operations can be allayed by a hypodermocylis, or by the administration of a salt solution by the rectum.

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A Declaration of Independence.

Has not part of the explanation of the profession's lack of complete unity in the past been due to differences in economic interests? Some of us, through force of circumstances, have been what may be called retainers of the master-class. Our interests have been in the direction of the rich and socially powerful and from them we have derived almost everything. Others, through equal force of circumstances, have found their interests to lie with the middle classes. Still others have worked largely among the poor. To be sure the majority of us have served every class, but none the less we have found our interests to be allied more with one class than another, and our social outlook has been correspondingly moulded. The possession of only a thousand dollars' worth of some good traction stock, it is said, has been known to change the most rabid socialist into a reactionary. So long as conditions were fairly good, and prosperity prevailed, there was little or no talk of socialization of the profession, and of other sad compromises with the society that we served. Now we must keep in mind that whereas we had little consciously to do with the creation of the social order under which we formerly worked, to-day as a unified body we are taking part intensively in the making over of that order. That part ought to be most important, and we must see to it that the medical profession comes out of the reorganization with dignity and even with glory. It is only those who wish to see industrial autocracy triumphant, rather than industrial democracy, who urge socialization. That way dignity does not lie. That way glory cannot be descried at all. The profession and all the people must be free. They must not be permitted to fall under the sway of bureaucracies.

When we say that the profession is united—fortunately drawn together by reason of the cataclysmic social changes that are impending—we mean that it is united in the determination not to be exploited and in the determination to serve properly its own interests and those of the sick, as well as of those threatened with sickness, which is to say everybody. That service will be best insured by adherence to the standards of the past. To the degree that we fall under the thrall of sociological doctrinaires, politicians and the autocrats who would make card-indexed serfs of everybody, to that degree do we recklessly court professional demoralization. When we speak of the profession and its unity we exclude the contingent who appear bent upon betraying the profession, and their weak-minded followers, the latter made up in the main of men who never had any proper place in the profession and who never will have under any dispensation. The very few incorrigibly and solely devoted to plutocratic interests may also be ignored when we speak of unity to-day.

It is well that hard times are upon us, if we emerge more upstanding than before they overtook us. Let us keep the issues clear in our heads, let us ostracize those who wantonly defy the first professional principles, and let us discipline those who reject all experience and the standards which have made the profession what it is to-day. If we are men, we will control the circumstances that press in upon us and not be controlled to a disastrous degree by them. The menace is great, but we are strong to meet and overcome it, for we are the children of giants who founded for all time, over whose splendid plan the shadow of socialization should never have been permitted to so much as fall, and from which it must be lifted, in so far as it has fallen.

The Menace of Irresponsible Legislation.

The liberties which were dearly bought by our forefathers are not valued to-day. Half-baked reformers frame bills and present them for introduction to obliging legislators whose main concern in life is to do favors for as many constituents as possible, with a view to re-election. Such bills show an increasng tendency to strike at our liberties, including the liberty not to have smallpox. Because we have all but wiped out smallpox through vaccination people to-day do not value their comparative freedom from it. They have no realization of the great boon that has been conferred upon them, and would unwittingly wipe out in a day that which was attained at great cost during past years. If what medicine has done for the people were fully realized by them we should have far less difficulty in safeguarding scientific interests. We laboriously build up, only to have some fool menace our work generations afterward, as though some idiot were to thrust a knife through a great work of art, while the people stood by with no understanding of the outrage. Just now medicine is peculiarly menaced by a legion of fanatics and paranoiacs who seem bent upon breaking down everything that safeguards our science and art. Antivivisection agitation is another nuisance; the bills to legalize the practice of all sorts of freak cults threaten us constantly; and finally there are the legislative attempts to regulate legitimate medical practice itself in all sorts of petty ways.

We really must lay aside the tools of our craft for a while and attend summarily to the morons who are causing trouble.

The Identical Interests of the Physician and the Worker.

The wages of many workers tend to a minimum that is often less than enough to maintain a decent family living. They are the victims of a system of payments elaborated by industrial organizations in which a disproportionate share of the profits goes to the master class. The chance to rise is a mere legend. We are in the midst of an industrial feudalism. If all workers were possessed of the most righteous and industrious principles, and economic to the point of parsimony in their living, their plight would be none the less desperate. Three-fifths of the adult males engaged in the textile industry in a Massachusetts city earn less than $416 per year, although a Federal inquiry has shown that $484 is a minimum standard, and $690 an efficiency standard.

The principles involved in the workmen's compensation law may yet be invoked to cover all medical as well as surgical cases, and something akin to the Insurance Act of Great Britain be developed in this country.

The trouble is that society does not guarantee all persons opportunity to develop latent powers and faculties and actually to get what they earn. Instead, the workers are victimized by low wages, overwork, unemployment, monopoly and special privilege. The theoretical principles of American democracy are thereby shattered.

If the condition of the workers were what it ought to be the economic problems of the medical profession would dwindle in seriousness. Our low earnings are a reflex of vicious industrial conditions. We share economically in the exploitation of the workers and are further directly exploited in so far as we render free medical service, which simply makes us retainers of the master class and jointly responsible for the abuse of social justice.

If our so-called altruism had been really founded upon sound principles we should not be helpless and without influence to-day. If it had been as moral as it has been claimed to be our influence would be great indeed.

If the working class got what it earned there would be no socialistic bunk in the air and no talk of socializing the medical profession. In place of political palliatives a sane social system is needed.

But society seems to be committed to the policy of tinkering clumsily with vicious end-results, and the medical profession is expected to lend itself to the rotten programme with absolute abandon.

Is it inevitable that we be degraded? We are idealistic enough to retain the apparently forlorn hope that a healthy resistance will yet show itself. We owe it as a duty to the workers and to ourselves to be militant opponents of the industrial juggernaut that is ironing out the souls and bodies of men. The issues are clear. For which cause shall we declare ourselves?

We have no use for the medical societies organized to discuss our economic concerns which blink fundamental factors and focus all their energies upon remote results and petty side issues, and whose members are willing to compromise upon the basis of immediate palliation of fundamental abuses. The great profession of medicine is thereby stultified and so many more goats are counted by the master class. It is social vision that is needed now and a Nietzschean brutality in forcing reform. Our cause is indistinguishable from that of the workers and we must cultivate deep sociological knowledge and join forces with those who toil and are despoiled of the profits of industry.

War Babies.

The "war babies" of England are said to number now about thirty thousand. The illegitimate birth-rate on the Continent must also be very high. War confers a sexual latitude upon the soldiery which is not countenanced in time of peace. Is not this a privilege which must of necessity be informally and tacitly conferred as a kind of compensation for the hardships of war? And does it not help to prove war a brutal anachronism? Even if the privilege is not actually conferred it is *taken*. The facts speak plainly enough and are partial evidence that war is the last and most complete brutality of man. And bound up with the sexual exploitation of women is something else, namely, the spread of venereal disease, which is to-day as in the Middle Ages the constant accompaniment of armies.

Industrial Efficiency and Alcoholism.

When prohibition was once before an issue in England a high dignitary of the English church made a famous remark. He said that he would rather see England free than sober. To our minds the fallacy in this consisted in the unfounded implication that the freedom to get drunk included other forms of freedom. The fact was, and is, that drunkenness connotes serfdom. We admit that prohibition as a disciplinary standardization is a rank imposition. The Mohammedan is so standardized through the discipline of his religion. He does not use alcohol, but his relative freedom from alcoholism has not banished his poverty or his crime. Prohibition of alcohol without prohibition of social pathology effects little or nothing. It has been suggested, and we think with much truth, that our own prohibition movement represents a recrudescence of the war on our personal imperfections masking the abandonment of twenty years of feud against our railroads, our monetary and capitalistic organizations, our courts and our laws. If there is nothing else behind it it will prove fatuous and futile. Putting it into effect will not of itself lessen the number of industrial serfs. So long as we perpetuate our system of industrial serfdom alcoholism is a necessity, for alcoholism enables men better to be serfs. Alcoholism now makes for industrial efficiency in that it makes exploited men sodden, and sodden they must be kept if we would have them content with their miserable lot. If you would have men live like animals under an insufficient wage system, which is the way they must live, then you must anesthetize them with alcohol. Enable them to live like men by improving their condition and giving them their fair share of the wealth that they earn and they will not have to be stupefied into an acceptance of their degradation. There is no mystery in the devotion to the beer can. If men must be machines then their brains must be stolen away, for with unclouded brains they would not conform well with the machine conception.

Prohibition is a farce and a crime where it does not go hand in hand with industrial reform. We shall not be ready for prohibition until we are ready for social justice, and we still seem to be far off from a consummation of the latter.

The Hospital Orderly.

It is known to all men that many of our public and private hospitals employ as helpers "rounders, down-and-outs and semi-responsible drunks." Moreover, this system is defended by many of those who recruit these helpers as quite satisfactory, and public officials have seriously recommended its continuance. They drift in and out of employment, staying an average of from 77

to 134 days at a time at salaries ranging from $120 to $480 a year, with maintenance, or board and lodging (recent study of Manhattan hospitals). It is argued that since the support of the indigent is assumed by the community, and in view of the absence of other institutions wherein the periodic and semi-responsible drunks can live and work, they can, to the best advantage both to themselves and to the city, be supported as workers in hospitals. Many of them render good service when sober and make the best of the small wage.

All this is very well, but one cannot but feel that the problem is not nearly solved. We think that the situation could be vastly improved, and the service rendered by these helpers much enhanced, if certain things were done to enable this class of workers to develop a higher degree of self-respect. We advocate good living quarters, better pay, titles, uniforms and insignia. We are confident that practical trial would prove our ideas sound. By title we mean something to indicate the petty official, the term orderly being discarded, with its old connotations.

Medical Legislative News—A Suggestion.

Now that it is the fashion for our legislators, inspired by the many agitators and respectable anarchists, to make frequent, if not constant, assaults upon the medical citadel, we think it would be timely for the medical journals thoroughly to arouse and educate somnolent members of the profession to the perils that threaten them from this quarter. A digest should be regularly published of all legislation bearing on the practice of medicine, proposed, pending in committee, passed, awaiting the Governor's signature, open for hearings, etc. Lists of legislators should also be regularly published, with each man's record on medical legislation. By making these reports a matter of smart journalism, and featuring them persistently, with suggestions, readers should be interested as much by this phase of medicine as any other. Here is a chance for a medical Samuel Hopkins Adams to make a name for himself. There is good opportunity to work up medical legislative news after the fashion of the articles on patent medicines in *Collier's*, the *Tribune*, etc., with satirical quips directed against the dopey practitioner, fables bearings upon the legislative situation, etc., which would give the column life and sparkle, and save it from the dryness that is usually associated with such matter. Here is an untilled field in medical journalism. Merely to publish regularly a list of legislators, with their medical records summarized after the fashion of the reports of the Citizens' Union, would do much good. Let us turn some of our talent for research into this practical field. Surely we have men with a genius for inquiry of this sort, and there is now a necessity for it as great as many others.

Alcoholism in France.

Although the absinthe traffic has been suppressed in France, it appears that the persons who make crude alcohol from grapes and apples, nominally for their own consumption, although really for the purpose of flooding the country with inferior spirits, are not interfered with. They pay no excise tax, and their vile alcohol is said to multiply frightfully the number of insane, arthritic and tuberculous cases. The *Temps* says that as a practical check to the evils of alcohol the suppression of the absinthe traffic is absolutely ineffective. It would be interesting to know whether a similar condition exists in Russia, where the vodka traffic has been stopped.

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

I.

Little Journeys to the Homes of Medical Anarchists.

We don't know whether Elmer Lee will object to our calling him an anarchist. But that term is no longer one of reproach. Nowadays one who dodges the "charge" is apt to be rated as not very respectable. This generation has moved up even to Emma Goldman, and that gentle and cultured soul can now be permitted to meet one's children. So when we use the term anarchist in this column it is to be understood that some sort of intellectual aristocrat is meant and not the vulgar spectre of the popular mind.

Elmer's anarchy has to do mainly with food and feeding. He wants to change the social order through the medium of the inner man. He traces most of the evils of the world to the kitchen, and you'd believe that he was more than half right could you hear him expound his views. A sight of Elmer's kitchen would convert most people. It's the cleanest kitchen in the world. No animal food product ever comes into it, and if a bug ever appeared there we fear that the effect upon Elmer would be fatal.

The doctor does all his cooking in one dish. The waste is so little that were everybody in New York to live according to his plan the garbage department of the city would shrink about seventy-five per cent. and a large number of people forfeit employment. That awful *bête noire*, the after washing of utensils, ceases to terrorize.

The doctor holds the theory that if everybody observed simple dietetic and hygienic laws sickness would be reduced to a minimum. He uses no drugs in his practice, and simply teaches his patients how to live. They are taken into his kitchen and shown how to prepare food according to very simple principles which he has worked out. This appealed to us tremendously. Most of us talk learnedly about diet to our patients, but how helpless we should be if we had to prepare food for consumption. Lee goes into the practical side very thoroughly and in person.

Dr. Lee has the courage of his convictions to that degree that he does not hesitate to discard asepsis in the treatment of wounds occurring in patients living according to his system. This, it seems to us, is the most serious phase of his anarchy. He manifestly has a faith in *his* patients' powers of resistance which is splendid if well-founded. He pins his faith absolutely to right living, and somehow or other that kind of a stand appeals. There is more in it than we might think at first glance. *Right living*—of course that ought to make supermen of us, when you think of it; and the idea is entirely in line with modern conceptions.

We must admit that but few people live right. Only Heaven—and Dr. Lee—know what would result from such living. How can any intelligent physician fail to connect the metabolic diseases with the disgusting dietetic habits of many people? Why should not the consumption of vast quantities of rich and greasy food work metabolic havoc in persons who get little or no exercise, fresh air, proper hours of rest, or sane emotional and sexual life?

Another serious phase of Dr. Lee's anarchy is his bland claim of successful hygienic treatment of *syphilis*. This is heresy indeed—"punch" almost inconceivable to timid thinkers. But think it over. What chance would

even the organism of that dsiease have in the body of one taken in hand after the manner and method of Lee? Who can say? What chance would it have to infect one who at the time of exposure was *living right?*

All our traditional prejudices against this kind of thought and practice burst out at this point. But one moment—we have never put the theory to test and have seen no demonstration. Our own scientific principles bid us not to draw Aristotelian conclusions. Lee in 1893 reported cases of syphilis cured without drugs before the American Medical Association. Despite his anarchy his methods have been strictly ethical. It is no reproach to be ignored by the profession. That was Mendel's fate in science. Lovers of the truth for its own sake have no priggish sensibilities.

It is a joy to watch Dr. Lee in his kitchen. To him it is a laboratory, or rather a shrine. He enters it as one would the holy of holies. He caresses his foods with a kind of affection and reverence. The proceedings savor of religious ritual.

Has this medical Thoreau got hold of a basic truth while his brethren grope in darkness? Has he reached out and touched the Holy Grail while the others are lost in the fairy forest of therapeutic endeavor?

Who knows? Let the Pharisees rail, and let the endowed institutes laboriously evade the goal. For all that the truth may lie hid in a napkin in a certain house in 58th Street, Manhatan.

II.

Little Journeys to the Homes of Medical Anarchists.

Quite the gentlest and most lovable of our medical anarchists is Beverly Robinson. He is against the present order of things only in the sense that he believes the law of love should supplant the principles of paganism that still actuate many of us. He has no patience with abdominal marauders and those who chase every new "therapeutic" vagary to the *neglect* of well-tried methods. The sick man is never a "case" to him, and he holds us to strict accountability for the end-results, economic as well as medical, of our treatment. He is the living embodiment of what the family physician ought to be, and a complete refutation of all the calumnies that have of late been heaped upon that much discussed character. The fact is that the medical world has found it so hard to meet the requirements and ideals of general practice in the sense that Robinson understands them that it has dodged them and attempted to justify its attitude by vilification and worse. It is because few of us can hold the pace set by our Robinsons and Jacobis that we withdraw into narrow nitches suited to the small range of our "powers." This is the simple truth of things. In place of the giants of other days there is now to be descried mainly a horde of pygmies. The pygmies are relatively useful in their small spheres, but let them hold their peace with respect to better men capable of fulfilling the larger functions of medical practice.

If we mistake not, Robinson's chief heresy is his stand against unnecessary operations for appendicitis, so-called. For many years he has stood in the wilderness, crying out against the prevailing mania. There is no question that the medical decencies have been outraged in this field by an army of crude tinkers and plain buccaneers. The competent and conscientious operators have been tagged by a reserve phalanx of near-surgeons and a full crew of outright Hooligans of the knife. The American College of Surgeons was organized in self-defense. Bernard Shaw has dramatized most amusingly the type of surgeon with a crotchet for removing the "usiform sac" in the "Doctor's Dilemma," a medical clown who finds in disease of this imaginary organ the source and origin of all the ills of the flesh. Robinson has never minced words in characterizing the practices of this class of practitioners.

In the contempt which Robinson holds for the surgeon who fails to give full consideration to the remote results of his operative procedures we heartily share. That such consideration is often not given is proved amply by the protests that have been formally filed not alone by Robinson but by others of equal rank who have been appalled by their observations.

Robinson would have us apply a little more practical Christianity at the bedside, both in the hospital and home, not to speak of the dispensary. He conceives all men to be his brothers in a real sense. While in no sense a nihilist as to drugs, he puts loving care first and consigns to limbo the prevailing tendency to make an experimental laboratory of the ailing human body.

This gentleman of the old school has not confined his militant attentions to the barbarisms of practice, but has for years been foremost in the ranks of those who have battled against the medieval methods in vogue in our prisons. The prison reforms which are now being instituted in New York are in large part traceable to his persistent efforts. He would modestly disclaim this, but it is well attested. With the prisoners in the Tombs he works individually and indefatigably and has the greatest faith in his "boys"—a faith founded upon results. Those who recall Forbes Robertson in Jerome K. Jerome's "The Passing of the Third Floor Back" will be able to form a bit of an idea of what this unreserved giving of a cultured spirit to men in dire trouble must mean to the recipients, men who have all but lost hope and faith. In the last place in the world where they would expect to find it they meet this beneficent influence.

There is nothing of the sentimentalist or fanatic about Robinson. He is the most practical of mortals—a dreamer who applies his dreams and turns them into glorious realities.

This man's career in medicine since his graduation from the University of Paris, France, in 1872, has been a complete and brilliant success. As a teacher in the Medical Department of New York University, as a practitioner, as physician to St. Luke's and the City Hospital, as a worker in local and national societies, as a medical publicist in the best sense, as a reformer of our obsolete penal methods, as a courageous and self-forgetful upholder of professional ideals and the Golden Rule, and as an opponent of ethical quackeries and worse, his has been an inspiring and beneficent life. To the sick and to his friends his very presence has always been in the nature of a benediction.

This is the type of practitioner that the profession needs in greater measure—the man of universal sympathies conjoined with practicality and the highest and broadest technical attainments—the man who sees sanely and wholly the social complex behind each human problem and who is imbued with a deathless faith in his fellow men and the conviction that it may yet be said with truth: "God's in His Heaven, all's well with the world."

"Some" Inertia.

The prohibition movement is faced not only by the enormous economic interests engaged in the production and marketing of alcoholic beverages, but by vast insti-

tutional concerns which society has created to care for the victims of alcoholism—prisons, asylums, homes, harbors for defectives, etc. The vast political patronage at stake has to be reckoned with. In the perpetuation of alcoholism great hordes of officeholders find their subsistence. Between the two elements aforesaid the prohibition movement finds some inertia to overcome. The resistance of the one is militant, that of the other subtle, indirect, not readily discerned, and, from the very nature of the case, a Frankenstein of our own creation which now gibbers and squeaks at our eleventh-hour efforts at rehabilitation.

Chickens come home to roost.

The Ithyphallic School.

The following extracts from William James' "Varieties of Religious Experience" is a salutary corrective, from one of unimpeachable ability and disinterestedness, of what may be called the ithyphallc psychological school.

James says ("Varieties," &c., pp. 10-12):

A more fully developed example of the same kind of reasoning (that spiritual value is undone if lowly origin be asserted) is the fashion, quite common nowadays among certain writers, of criticizing the religious emotions by showing a connection between them and the sexual life. * * * As with many ideas that float in the air of one's time, this notion shrinks from dogmatic general statement and expresses itself only partially and by innuendo. It seems that few conceptions are less instructive than this reinterpretation of religion as perverted sexuality. * * * It is true that in the vast collection of religious phenomena, some are undisguisedly amatory—e. g., sex-deities and obscene rites in polytheism, and ecstatic feelings of union with the Saviour in a few Christian mystics. But then why not equally call religion an aberration of the digestive function, and prove one's point by the worship of Bacchus and Ceres, or by the ecstatic feelings of some other saints about the Eucharist? Religious language clothes itself in such poor symbols as our life affords, and the whole organism gives overtones of comment whenever the mind is strongly stirred to expression. Language drawn from eating and drinking is probably as common in religious literature as is language drawn from the sexual life. We "hunger and thirst" after righteousness; we "find the Lord a sweet savor"; we "taste and see that he is good." * * *

In fact, one might almost as well interpret religion as a perversion of the respiratory function. The Bible is full of the language of respiratory oppression. "Hide not thine ear at my breathing; my groaning is not hid from thee; my heart panteth, my strength faileth me; my bones are hot with my roaring all the night long; as the hart panteth after the water brooks, so my soul panteth after thee, O my God." * * *

These arguments are as good as much of the reasoning one hears in favor of the sexual theory. But the champions of the latter will then say that their chief argument has no analogue elsewhere. The two main phenomena of religion, namely, melancholy and conversion, they will say, are essentially phenomena of adolescence, and therefore synchronous with the development of sexual life. To which the retort again is easy. Even were the asserted synchrony unrestrictedly true as a fact (which it is not), it is not only the sexual life, but the entire higher mental life which awakens during adolescence. One might as well set up the thesis that the interest in mechanics, physics, chemistry, logic, philosophy, and sociology, which springs up during adolescent years along with that in poetry and religion, is also a perversion of the sexual instinct—but that would be too absurd. Moreover, if the argument from synchrony is to decide, what is to be done with the fact that the religious age par excellence would seem to be old age, when the uproar of the sexual life is past?

The Diagnostic Terminology of Alcoholism.

We hasten at the outset to disabuse the reader's mind of any idea that he is about to read a solemn essay on this subject, as our title apparently implies. We submit, however, that what we are about to say is highly technical. The colloquial language in which a large class of people express their understanding of the different types of intoxication is what we should like to discuss. It is often said that slang betrays paucity of language resources, but in the terminology which interests us just now we fancy we detect a word inventiveness which has been stimulated because the language has lacked terms wherewith to characterize the many forms of alcoholism. The practical necessity for such characterization is great, and out of it has grown quite a large family of words of varying significance to the initiate. We confess that personally we have no nice appreciation of the shades of meaning conveyed by such terms as soused, jagged, spiflicated, lit up, pickled, etc. To have a bun on is not the same thing by any means as to be stewed. The distinctions are many and fine, really as fine as the psychoneurotic classifications of the psychiatrists. There are bartenders who are specialists in the differential diagnosis of alcoholism. We of the profession speak of alcoholic coma, of delirium tremens, etc., but these distinctions are relatively crude. A writer in the *Sun* recently called attention to the many fine subdivisions of the subject, and cited a vast number of alcoholic states—something like twenty-five or thirty. Here is a field in which many a lay observer of peculiar and large experience excels.

How to Become a Specialist.

We read the other day of a country in the East where all that a sorcerer had to do to secure acceptance was to say: "I am a sorcerer," and presto, he became an accredited sorcerer. If the people doubted at times, it was only necessary, in order to convince them, to tell them of the sorcerer's invisible snakes and the terrible things they could inflict upon the sorcerer's enemies if he so willed.

This story reminds one irresistibly of certain specialists. We have known gentlemen to repeat what was tantamount to the sorcerer's formula, and presto, they were accredited by the profession and public as specialists. "I am a specialist" seems to be as potent a charm as that of the East Indian medicine man.

And the specialist has something quite as good as the sorcerer's snakes—no, something much better although equally invisible. He has made the general practitioner believe certain things through the force of *his* invisible talisman. What those things are it is not necessary to particularize.

Cirrhosis of the Liver.

In view of the statements made by certain authorities, though these had been questioned, that spontaneous cirrhosis of the liver occurs in the laboratory rabbits and other animals, A. L. Grover, Iowa City, Iowa, reports that he has examined the livers of about three hundred rabbits and in no case has careful macroscopic or microscopic examination revealed anything that might be classed as a spontaneous cirrhosis. A cirrhotic reaction has been experimentally produced in ten cases by the use of alcohol, and in others by other agencies, and in the series there are about twenty-five rabbits that died from spontaneous infection by pyogenic bacteria. The series was made up of animals from a great many sources—many of them raised in the laboratory, and he would expect the results to be the same in any other series of the same size. From his experience he believes that the cases previously reported can be explained on the ground either of some infection existing at the time or previously, and he concludes that sufficient evidence has never been brought forward to invalidate the use of animals in experimental work on cirrhosis.—(*J. A. M. A.*, May 1.)

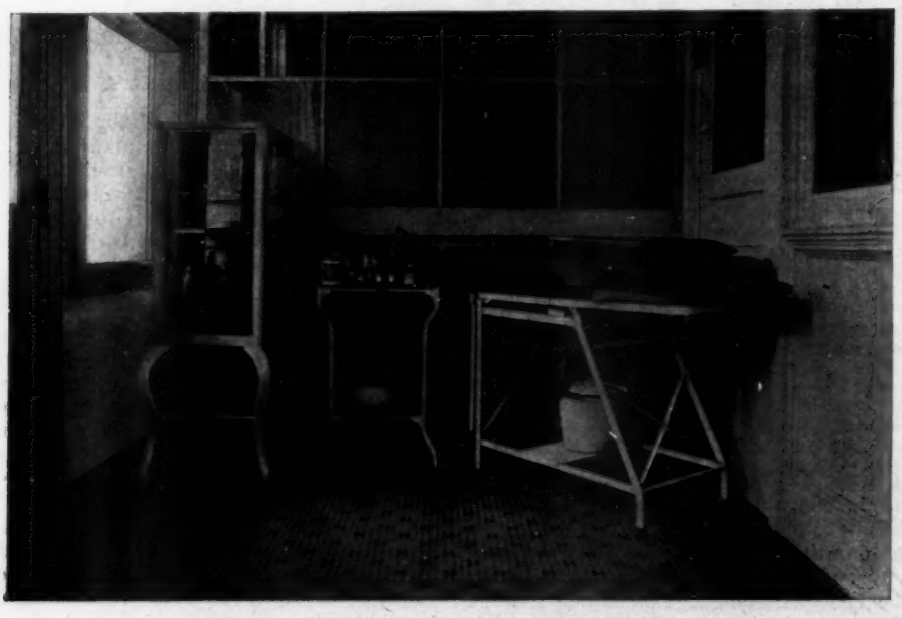
Where the Great American Industrial Corporations

YOUNGSTOWN SHEET AND TUBE COMPANY, YOUNGSTOWN, OHIO.
Physician and Nurse Using Pulmotor.

First Aid to the Injured.

The great industrial corporations of the United States have made remarkable progress in the introduction of hospitals and first aid stations in their manufacturing plants. A few years ago such institutions were almost unknown. To-day every well regulated factory of any proportion has within its limits at least one room in which its sick and injured employees can be cared for. The iron and steel industry has been a pioneer in this field, due, we suspect, to the indomitable energy of former Health Commissioner Thomas Darlington of New York, the present secretary of the Welfare Committee of the American Iron and Steel Institute. A trained civil engineer, physician and sanitarian, Dr. Darlington was quick to recognize the urgent necessity of properly safeguarding the health of the workers in the iron and steel plants in order to obtain the fullest efficiency. He has preached this gospel all over the country and has accomplished wonders.

The accompanying pictures appeared in the Bulletin



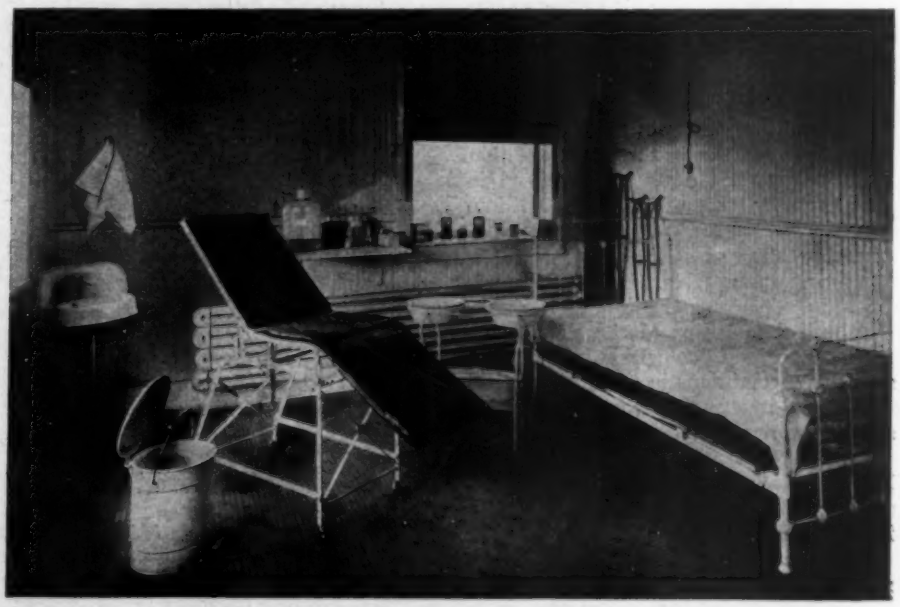
PRATT & LETCHWORTH COMPANY, BUFFALO, N. Y.
Interior of First Aid Room.

Give Their Injured Employees First Aid Treatment

CADILLAC MOTOR COMPANY, DETROIT, MICH.
Emergency Hospital in Main Plant.

of the American Iron and Steel Institute and are reproduced through the courtesy of the editor, Mr. James T. McCleary.

A glance at the *Bulletin* demonstrates how systematically the great corporations have approached this subject. The factories and mines have first aid corps, automobile ambulances, stretcher bearers, mine rescue teams and dispensaries. First aid cabinets, fully stocked with the necessary emergency equipment, are at hand in various parts of the establishment. Full time physicians are on duty in many places and most of the plants have a nurse constantly employed. The pulmotor is very much in evidence and the facility with which miners and factory workers employ it, is amazing. Winning prize stretcher teams compete in factory contests and every means is being adopted to bring the first aid department in these plants up to the highest point of efficiency.



OHIO IRON AND STEEL COMPANY, LOWELLVILLE, OHIO.
Interior of First Aid Room.

Diagnosis and Treatment

Sugar Solution by Proctoclysis in Postoperative Treatment.

Barbee, in *Northwest Medicine* says the results of his experience have been most gratifying. He is in a position to lay emphatic claim to sugar protoclysis as a valuable adjunct in treatment where water is demanded and where one is unable to utilize the stomach for this demand.

By careful observation and comparison we are assured that postoperative shock is lessened, the circulation quickly equalized, vomiting diminished, thirst allayed, perspiration induced, kidney excretion increased, gas eliminated, ileus less common, and, as in most of these cases in which the stomach cannot be utilized for several days, a valuable food element is constantly absorbed.

Thus far the writer has met with only a few instances in which the patient did not satisfactorily absorb the solution. The most of these could be charged directly to faulty technique in the use of the "Murphy drip."

Plain water per rectum is slowly absorbed. Salt solution is more rapidly absorbed but is slightly irritating, and salt is contraindicated in many cases. Sugar-water is rapidly absorbed, is practically non-irritant, and seems to exercise a general stimulating effect.

The strength of the solution used is 15 gm. of cane-sugar to 1 liter of water. It is administered by the (Murphy) drop method at the rate of 30 to 40 drops per minute. The rate may be increased or diminished according to the patient's need for water, or according to the rate of absorption. This rate will use approximately three quarts of the solution in twenty-four hours. The approximate caloric value of the contained sugar is 200 large calories.

It is an open question as to how this cane-sugar is utilized by the body. If it be not converted and actually used as food to the tissues, then its presence in the blood-stream acts as a tonic to the entire system. Landois states that cane-sugar injected under the skin is excreted as such by the kidneys. Repeated urine examinations in many of the cases of this series fail to show its presence in the urine. In two of the cases of gastro-enterostomy, for instance, the solution ran continuously for seven days. Nourishment in no other form was given. The patients did not complain of the slightest the urine. These results led the writer to believe that hunger, kept their weight, and no sugar appeared in the sugar administered by rectum is converted into glucose and utilized by the tissues.

The sugar-water is started as soon as the patient is put into bed from the operating table. If there be much shock, if the patient be deeply anesthetized, or if vomiting, he is left flat until the position can be altered to a low Fowler, in which position protoclysis is most successful. There are many conditions in which the patient must remain flat, but the great majority may and should receive some elevation at the head. Within a short time the pulse increases in volume, the skin becomes warm and moist, followed by free perspiration, there is much less or no thirst, vomiting is lessened, kidney excretion increased, and gas escapes. When these results are obtained and maintained, we are past postoperative shock and the fear of ileus. With a few exceptions these results will follow the use of sugar solution by proctoclysis.—(*Ther. Gaz.*, March, 1914).

Pruritus Ani.

L. E. Norbury of London says treatment must be both local and general. In the first place, if a definite cause can be discovered, such as thread-worms, this must receive appropriate treatment. The urine should be examined for sugar. If a fissure, fistura, or hemorrhoids be present, they must receive proper attention; hypertrophied papillæ should be cauterized; granular proctitis should receive local applications by means of the sigmoidoscope or by rectal injections.

At the same time, various local applications to the anal skin and its surroundings may be employed with marked benefit. If no definite lesion can be discovered to account for the symptoms, the treatment will of necessity be palliative.. Mecurial ichthyol, or carbolic ointments or a preparation of lead acetate and oxide of zinc may be used.

Swinford Edwards recommends the application of lead and milk in certain cases, the formula employed being:—

℞ Liq. Plumbi Subacetat. Fort. 3j
Lactis 3vij

The preparation should be freshly prepared daily, and applied by means of absorbent cotton.

Bathing the part with 1 in 20 carbolic lotion will often give temporary relief. Norbury sometimes shaves off the hairs of the anal skin and its immediate neighborhood, and paints the anal folds and the spaces between these, not forgetting the post-anal groove, with pure phenol. This renders the part tender for a few days, but a good result is often obtained; zinc ointment is employed, until all soreness and tenderness have disappeared.—(*The Practitioner*, No. X, 1914).

Treatment of Urticaria.

Although there are practically no drugs for the internal treatment of this affection, Brocq prescribes quinin, ergotin, or belladonna, and advises the following:—

℞ Quiniæ Hydrobromatis ..... gr. ¼
vel Hydrochloratis,
Ergotinæ ..... gr. ¼
Extracti Belladonnæ ..... gr. ⅛-⅓
Glycerini,
Extracti Gentianæ ..... ad. q. s.
M. Fiat pilula I.
S. One or two to be taken every two hours.

For those who cannot tolerate quinin, the following may be given:—

℞ Ergotinæ ..... gr. iss
Extracti Gentianæ ..... gr. ¼
Extracti Opii ..... gr. 1/6
M. Fiat pilula I.
S. One or two to be taken daily.

Lotions.—Fouquet gives the following as useful:

℞ Chloralis Hydratis 3j
Aquæ Laurocerasi 3vij
Misce. Fiat lotio.
℞ Acidi Thymici ..... gr. xv
Acidi Carbolici ..... gr. xxx
Alcohol (90°) 3viij
M. Fiat lotio.

Powders.—The following is a useful form of combination:

℞ Mentholis (pulv.) ..... gr. v
Camphoræ ..... gr. xx
Magnesiæ Carbonatis,
Zinci Oxidi ..... ana 3ij
Talci 3i
M. Fiat pulvis.

(*Journal de Médecine internal No.* 14).

Treatment of Blepharitis.

For the relief of this affection, Cantonnet recommends the following measures.

Phthiriasis must be treated by first softening and removing the crusts which protect the parasite, and then applying mercurial ointment night and morning for several days.

When it accompanies a subacute conjunctivitis, the eyelids must be bathed two or three times a day with swabs of absorbent wool soaked in a 1 per cent. solution of zinc sulphate.

The seborrhæic and squamous varieties are treated with lotions, at a temperature of from 95° to 104° F., containing a little 1 per cent. solution of borate or carbonate of soda in boiled distilled water.

After drying the eyelids well, this ointment should be applied once or twice a day:—

℞ Hydrargyri Subchloridi .....gr. iss
Adipis Lanæ Anhydrosi,
Paraffini Mollis .....ana 3i
M. Fiat unguentum.

This must not be used if the patient is taking iodides or bromides.

In eczematous cases especially, Lapersonne recommends:—

℞ Zinci Oxidi .....gr. xv.
Resorcini .....gr. iss.
Paraffini mollis.....3iij.
M. Fiat unguentum.

Blepharitis with ulceration requires, in the case of pain, spraying twice a day with a steam-spray, the eyes always being protected by means of a piece of soft linen. In other cases, hot fomentations, made with plain water or a solution of oxycyanide of mercury 1 in 5,000, will soften the crusts which can then be removed slowly and without causing irritation.

In more serious cases, after drying the lids, a little freshly prepared tincture of iodin is applied, or little of this ointment:—

℞ Ichthyolis .....gr. ix.
Adipis lanæ anhydrosi,
Paraffini liquidi.....ana 3i.
M. Fiat unguentum.

In grave cases, epilation of the more affected lashes should be followed by local application, on small pledgets of absorbent cotton of 1 or 1½ per cent. solution of silver nitrate.

The eyes should be rested, and smoked glasses worn. —(*Journal de Méd. et de Chir. prat.*).

Tuberculin.

W. C. Wilkinson of Sydney believes tuberculin to be effective, should be used in large doses. In his Weber-Parkes prize essay, he stated positively that, a dose of at least .5 c.c.-.6 c.c. of the stronger preparations was necessary to secure a permanent result. In 1910, Professor Koch told him that experiments by means of the fixation of the complement showed that the presence of anti-bodies in the blood could not be demonstrated until .5 c.c. of the stronger preparations had been given. This very striking and accurate agreement of the observations made by Wilkinson on purely clinical grounds, and those recorded by Professor Koch, by means of the most exact methods of the laboratory—one set of observations in Australia, and the other in Berlin—is surely *primâ facie* evidence that tuberculin, as used in 1890 and still used at the present time by many observers, might fail to produce any real substantial benefit to the patient, while the relatively large doses (not less than ½ c.c.) used by many German authorities, for the last 17 years, may produce real and lasting benefit.—(*Practitioner*, London, Nov. 1914).

Diseases of the Septum.

Obstruction from deformities of the septum is one of the most common conditions to be observed. Septal deviations and spurs may be found in all varieties. Deviations of moderate amount may cause practically no symptoms, until some determining factor comes into play. Septal outgrowths and deflections act mainly in three ways: by causing marked obstruction to nasal breathing, by pressure, or by upsetting the proper drainage of the nasal cavities. Very often, all of these abnormal results are present together. Obstruction to nasal breathing brings on all the evils of mouth breathing. Pressure in the nose means irritation of the fifth nerve, resulting in reflex disturbances such as pain, sneezing, and nasal asthma. Headache is often a prominent symptom and, when present, is usually characterized by starting at the root of the nose and spreading fan-wise over the forehead. Pain, other than headache, due to pressure is usually manifested by dull aching across the bridge of the nose. Nasal asthma may occur apart from true hay fever, as a result of the irritation of intra-nasal pressure, and may be relieved by removing the condition giving rise to such pressure.—(*The Practitioner*).

Etiology of Scarlatina.

An editorial writer in *Presse méd.*, by *Am. J. Obst.*, questions whether the old idea of the propagation of scarlatina by means of scales has any foundation except as the scales have become inoculated by discharges from the mouth and throat. He explains thus the undoubted cases of conveyance by means of letters, and clothing that has been carried for long distances. The hands have been infected from the mouth and so scales have remained in the letters, or the discharges have remained on the garments. Persons who approach the patients may carry germs in their clothing, shoes, and hair when they have come in contact with discharges. The germ of scarlatina is not eliminated directly by the skin.

Inoculation of monkeys have proven the virulence of exudations from the tonsils. The virus of scarlatina is very resistant and remains active for many months. The author believes that abortive attacks of scarlatina with no rash are frequent. At the same time the throats contain virulent germs, which they spread about because no isolation is carried out. Epidemics of scarlatina coincide with epidemics of sore throat and these sore throats are probably true scarlatina. A most important prophylactic measure is careful disinfection of the mouth and throat in all cases of sore throat. The scarlatina patient may convey contagion from the first moment of his illness, by the discharges from the mouth. By remembering these facts we shall be able to construct a better system of prophylactic care of the patient and insure the community against the spread of the disease.

High Intestinal Obstruction.

W. W. Grant, of Denver, says that whether enterostomy should be performed in very recent cases brought promptly to operation for mechanical ileus with no serious intestinal lesion may be a debatable question. But after twenty-four hours, with intestines and blood-vessels distended and paralyzed, and vomiting frequent, there can be no doubt that enterostomy gives more prompt relief to symptoms, and at least prolongs life. Until some measure of relief is found for the toxin, the result of the obstruction, the mortality will continue high. (*Surg. Gyn. and Obst.*, April, 1915.)

Test for Bile and Hemoglobin in the Urine.

The most useful test for bile in the urine is the chloroform and Gmelin's test. For clinical purposes the tincture of iodin test is mostly applied: to the urine is added a few drops of dilute tincture of iodin (iodin 1 part, dilute alcohol 9 parts) and in the presence of bile a green ring is formed.

For the determination of hemoglobin the spectroscopic examination of the urine is the most certain but for ordinary clinical purposes the guaiac (or the benzidin) test is usually employed.

Lipp (*Muenchener mediz. Woch.*, No. 38, September, 1914) has devised a rapid and reliable method for the identification of bile and hemoglobin in the urine, a modification of the Gmelin test:

On a plate spread white sand so as to form a layer 3-4 cm. thick. Add to it a few drops of the urine to be examined. If the urine contain coloring matter a spot is left when the urine is imbibed in the sand. With hemoglobin this spot is *brown*, with bile it is *green*. This "sand test" has the advantage, beside its reliability, of requiring neither preparation, chemicals, filter nor spectroscope.—(*Urol. and Cut. Gaz.*)

The Dietetics of Eczema.

G. D. Lyman, of San Francisco, observes that on reviewing the results of the dietetical treatment of this condition one realizes the great variety of the claims. (*Arch. Ped.* No. 31, 1915.) Sometimes cutting down the quantity of the food is all that is necessary—the next time just the contrary, and the condition is not improved until the infant is fed up. With other cases neither the one nor the other is successful and help is only obtained by a complete change in the food. In these cases the qualitative and quantitative mistakes of the previous feedings must be abolished and the food suitable to the conditions present ascertained, so that a normal metabolism and assimilation may be brought about.

In the uncomplicated cases of eczema it appears that the fat and carbohydrate percentages are guilty. In some cases the salt assimilation seems to be disturbed. In the more chronic cases, there is often a disturbed protein digestion; still other cases are complicated by secondary and intestinal affections, and an immediate improvement takes place when the infections are healed, and the metabolism approaches normal. In other cases a reduction of the quantity of milk and going over to a mixed diet rich in vegetable and carbohydrate is the only successful means.

Local treatment alone or intestinal or dietary treatment alone are unsuccessful. It is necessary for the dermatologist and the pediatrician to proceed hand in hand. In all cases of eczema it is necessary to make a thorough complete examination of the stools for signs of indigestion, and above all else it is necessary to know and study the baby.

Early Recognition of Whooping-cough by the Complement Deviation Test.

A Friedlander, (*Lancet-Clinic*, Jan. 2), believes in closer supervision and isolation of whooping-cough cases. In 1906 there were 10,000 deaths from whooping-cough in the United States. In Philadelphia, from 1903-1908 inclusive, there were 1,302 deaths from whooping-cough, 1,054 from measles and only 784 from scarlet fever, or almost twice as many due to whooping-cough as to scarlet fever. Little is being done to control the spread of whooping-cough. New York, Philadelphia, New Orleans and Cincinnati alone have special wards for the treatment of whooping-cough.

Friedlander and E. A. Wagner have modified the complement deviation test so as to get the reaction in the earliest stages. They obtained positive reactions in the catarrhal stage in thirteen out of fourteen tests and did not fail to get a positive reaction in any case of whooping-cough in the paroxysmal stage. Vaccine therapy commenced early showed gratifying results. Doses of double the ordinary strength are required.

Hyperesthesia of the Solar Plexus.

Morris Schott of Cleveland concludes that an hyperesthetic point over the region of the solar plexus in the dormant state of tardy gastric pains suggests a pathological state of the gastric walls, a congestion of the mucosa, hyperacidity or ulcer of the stomach. Neuropathic hyperesthesia, on the other hand, has a widely different aspect, the production of the same not being constant, as is the case in the preceding class, besides, in neuropathic hyperesthesia of the solar plexus we usually detect the concomitant neuropathic elements. The origin of hyperesthesia due to distant pathological conditions can in most cases be traced by a careful and proper study and careful examination of the abdominal and pelvic cavities. Finally the absence of hyperesthesia of the solar plexus during the paroxysm of gastric pains should lead us to consider the presence of a possible tabes dorsalis.

There is no question that the examination and production of the solar plexus reflexes should be included in every careful diagnostic investigation, especially since it is a simple method, and in the absence of an esthesiometer can be carried out by simple finger pressure over a point of about one and a half fingerbreadths to the right of the median line and directly over the location of the trunk of the celiac axis.—(*Archives of Diagnosis*, Jan. 1915.)

Late Hereditary Syphilis.

Veeder and James present a method of treatment of this condition with neosalvarsan and mercury, which is very effective in their hands. (*Am. Jour. Dis. Children*). They have given over 200 injections of neosalvarsan most satisfactorily. Their general custom, subject to such durations as the case may demand is as follows:

Three or four intravenous injections of neosalvarsan are given with gradually increasing dosage two or three days apart. Then mercury is started, with small doses, which are gradually increased until the patient is taking a fairly large dose. In a few weeks this is interrupted for a short time and then repeated. In a number of cases a second and third series of neosalvarsan injections are given alternating with the mercury. The mercurial treatment is continued for an indefinite period of time according to the requirements of the individual case, and in general until a negative Wassermann reaction is obtained, if this is possible.

The neosalvarsan dissolved in 1 c.c. of freshly distilled water for each decigram and injected intravenously with a glass hypodermic syringe. The preparation of the drug and the administration can be accomplished in from twelve to fifteen minutes. The dose varies with the age and clinical condition of the patient. Gray powder is the form of mercury employed.

Pruritus ani sometimes follows operations for the removal of hemorrhoids.

Diseases of Children

Schick's Diphtheria Toxin Skin Reaction.

William H. Park, in speaking at the New York Academy of Medicine said the Schick reaction was the reverse of all the other tests in that a negative reaction meant immunization and a positive one meant susceptibility to diphtheria. The Schick reaction was due to the direct toxic action of the toxin of diphtheria; the negative reaction meant that the toxin was neutralized and a positive reaction meant that the subject did not have sufficient antitoxin in the blood to neutralize the toxin introduced. There was also the pseudoreaction which was anaphylactic in type; in reality it was due to the endotoxins. It gave the impression of a much more decided reaction than the positive reaction; there was slight infiltration and hyperemia at the site of the injection.

Park exhibited charts showing the result of the Schick test in children, from the time of birth to the fifteenth year, and in adults when the toxin was administered in the various ways—subcutaneous, intramuscularly and intravenously. In children between the ages of five and fifteen years, 50 per cent. showed a positive reaction, so that half of the children between these ages were immune and half were not. Among adults, 70 per cent. were immune and needed no immunization against diphtheria. In certain children, "once immune, always immune" seemed to hold good. In children who had had the disease the Schick test might be used to determine the limit of immunity.

At the Willard Parker Hospital they were not immunizing all the children admitted to the scarlet-fever wards, but only those who showed a positive Schick reaction. Of ninety children showing a positive Schick reaction, after an immunizing dose of antitoxin twenty became really immune and seventeen developed a larger amount of antitoxin in the blood. A child that gave a negative Schick test was perfectly safe among diphtheria carriers. Several other applications of this reaction could be made. One of these showed how rapidly antitoxin reached the skin, the toxic doses having been given six hours before the antitoxin by the different methods,—subcutaneously, intramuscularly and intravenously. When an intravenous injection of 1,000 units of antitoxin was given six hours before the toxin, it suppressed the reaction; when given four hours before, it greatly diminished the reaction; and when given two hours before, it absolutely prevented a reaction. When the toxin was given intravenously the reaction was increased.

There was another way in which the Schick test might be of some diagnostic value. If a case was supposed clinically to be diphtheria and one got a negative Schick reaction and a positive diphtheria culture, one might conclude that the patient was only a carrier and did not have a true diphtheria; that patient might carry a virulent bacilli and yet have a nonvirulent tonsillitis. About one-third of the cases of diphtheria developed antitoxin while about two-thirds did not. When one positive Schick test was found in a family, all the members of that family were likely to have a positive test. Park said they were now making experiments in the endeavor to vaccinate against diphtheria with the dead bacilli as they were doing against typhoid fever. They felt sure that an attack of diphtheria gave immunity for some time, but this immunity might be due to some other bactericidal substance.

The speaker cautioned his audience in regard to using the Schick test. The injections should be made intramuscularly or subcutaneously and one should use a fresh dilution, not one that had been standing for any length of time.

In response to the question as to how the diphtheria toxin was prepared, whether it was prepared like the tuberculin, Dr. Park said that the diphtheria toxin was prepared differently from the tuberculin, as in the tuberculin they wanted to keep the endotoxins while with the diphtheria toxin they tried to get rid of the endotoxins. They had been using a six-day product and were trying to get one of only forty-eight hours.

Park said the immunity seemed to be acquired; about 90 per cent. of adults and 90 per cent. of infants gave a negative Schick test. During infancy and the early years of childhood the immunity dropped off into 30 per cent., and then the antitoxin began to be produced again as the children grew older; why, no one knew. There was a large amount of antitoxin produced by some individuals; as much as 15 units had been observed and why it should continue to be produced beyond the apparent need was beyond comprehension. It might be that there was some saprophyte making it.—(*Am. Jour. Obst.*, Feb., 1915.).

Constitutional Whooping-Cough.

Mary C. De Garis, of Tibooburra, N. S. W. (*Med. Jour.*, Australia, March 6) is convinced that text-book authors do not lay sufficient stress on the liability to the occurrence of asphyxia and continued fever.

She classifies whooping-cough as follows:

(*A*) The ordinary form, with paroxysmal cough and little constitution disturbance.

Complications:

(1) Catarrhal, *e. g.*, bronchitis, broncho-pneumonia, pleurisy, gastro-enteritis, etc.

(2). Mechanical.

(*a*) Vomiting after coughing, often so severe as to interfere with nutrition.

(*b*) Hemorrhage from congestion, *e. g.*, subconjunctival hemorrhages, epistaxis, spitting blood, etc.

(*c*) Pulmonary collapse, from the coughing, apparently the only explanation for many cases showing numerous variable adventitiæ in chest, with unimpaired general condition.

(*d*) Suffocative form, leading in infants to actual asphyxia, requiring artificial respiration.

(3) Supervention of form *B*.

(4) Concurrent illness, *e. g.*, measles, urticaria, etc.

(*B*) The constitutional form, or continued fever of whooping-cough.

In this, the complications may occur as above, the catarrhal being the most frequent, and the asphyxial probably the most dangerous, as the child has so much less reserve on which to draw for the recovery from the exhaustion of the apnea. Tuberculosis may be a sequel.

The occurrence of continued fever during the course of pertussis, with few (if any) physical signs to account for it, is a very puzzling condition, unless it be remembered that it may be due to a constitutional infection with whooping-cough, comparable to a similar condition in, *e. g.*, influenza.

In her cases there were fever, rapid pulse, rapid respiration, slight cyanosis, *alae nasi* working, jactitation, apathy, or screaming, head retraction, meteorism, failure of nutrition, with entire loss of appetite; in several cases the chest was perfectly clear, in others a few

casual adventitiæ were heard; in all the whoop existed before the onset of the fever. This condition is frequently concurrent with, and often responsible for, the graver cases of complicating broncho-pneumonia, pleurisy and gastro-enteritis.

Asphyxia again is an alarming condition in infants, in whom artificial respiration may be necessary, and is not always successful. Asphyxia may follow a quite feeble cough. Measles may occur before, during, or after an attack of pertussis, and it seemed to have little adverse affect; in no case, however, did she see measles and the continued fever of whooping-cough occur together.

The younger the child the greater is the liability to the occurrence of asphyxia or continued fever, and the greater is their fatality.

Serious symptoms are frequently due to the constitutional disturbance of whooping-cough rather than to the complications of bronchitis and broncho-pneumonia to which they are commonly attributed.

Acute Pyelitis.

E. J. Wood, of Wilmington, N. C. (*Arch. Ped.* March), believes that acute pyelitis is being frequently overlooked in infancy because of the neglect of routine microscopic urinary examinations in all cases, but especially when there is obscure fever.

While the condition is more frequent in female children, still there are many cases in males which are overlooked.

The theory that acute pyelitis is always an ascending infection with the colon bacillus from the soiling of the vulva is losing its hold and other sources, as infection from the colon by way of the lymphatics, is gaining ground.

Acute pyelitis is often primary and does not necessarily follow one of the acute infections. Malaria and typhoid are often diagnosed in this condition.

The disease responds promptly to the use of potassium citrate through the rendering of the urine alkaline. Hexamethylene preparations are most disappointing and their use is to be questioned in infancy.

Scrofuloderma in Childhood.

K. Bahr (*Monats. f. Kinderhk.*, 1914, Bd. XII., No. 12 in *Am. Jour. Obst.*) tells us that tuberculosis in the first years of life is singularly fatal; in 69 children having tuberculosis Halin found a mortality of 83 per cent. With cases of skin tuberculosis the prognosis is better. Scrofuloderma, although local, depends on an infection of the blood, and hence should be as fatal as other forms. The author gives histories of 5 cases observed by him, all of whom were between six and twelve months of age, and all of whom were cured and remained without evidences of tuberculosis two and a half to three years after treatment. Only one of them received a specific or a special fresh-air treatment. Where there were cutaneous abscesses they were opened and injected with iodoform-glycerin. Therefore 4 of the cases showed spontaneous healing. Thus we see that scrofuloderma in early life is often benign.

Chronic Gastritis.

Liq. Strychninæ (B. P.)	♏iij
Acidi Hydrochlorici Dil	♏iv
Tinct. Aurantii	f 3ss
Glyceritæ Pepsinæ	3j
Spt. Chloroform	♏x
Aquæ	ad. f. 3j

M. Sig.: One dose three times a day after meals.

Obstetrics and Gynecology

Treatment of Amenorrhea.

Rieck, (*Zentralbl. f. Gynäk.*, 1914), discusses the amenorrhea not associated with chlorosis, severe anæmia, tuberculosis, or other constitutional ailments, but the idiopathic form dependent upon functional disturbance of the uterus or ovaries or both. Under amenorrhea he includes those cases of oligomenorrhea dependent upon the same cause and appearing in two forms: (1) a very slight flow lasting a day or less, and (2) a very slight flow every 3 to 4 months.

The symptoms in girls and women in the twenties were of local nature, cramplike abdominal pains, sacral pains, dizziness, headaches, fainting spells, and even epileptiform convulsions; whereas the symptoms in women beyond 30 years were more those of an anticipated climax: hot flashes, profuse sweating, general *malaise*, inability to work, and, above all, increased deposition of fat.

All these patients were first treated with hot douches to stimulate the atrophic uterus, later with ovarian or corpus-luteum extracts, without or in combination with iron preparations, and also massage and scarification of the cervix. By these measures a fair percentage of successes was attained.

Wherever improvement, however, was not apparent in 3 to 4 months the author used the intro-uterine stem pessary in 22 cases. In three cases failure resulted; in the other 19 cases distinct success was obtained. In 7 cases a pure amenorrhea existed; 2 cases were in young girls and were of 4 to 5 years' duration. In 12 cases an oligomenorrhea was present, the type of which was described above, extending over a period of 2 to 5 years.

The 7 cases of amenorrhea were all cured, not only during the period of wearing the pessary, but they have since remained well. The pessary usually exerted its influence within 10 to 14 days, in more severe cases within 2 or 3 months. Similar results were obtained in the oligomenorrhea cases, a marked increase in fluid appearing at the next menstrual period.

The pessary remained *in situ* for 14 days to 8 years. Sometimes it was expelled spontaneously, and was removed twice, as the bleeding became too profuse. In some cases it was used interruptedly during the year. His aim was to employ the pessary 8 to 12 months, although good results were obtained in from 6 to 8 weeks. The symptoms disappeared in 14 of the 19 cases.

The author considers the intra-uterine stem pessary an excellent medium for curing functional amenorrhea or oligomenorrhea. It accomplishes this in the great majority of cases in which all other means fail.

Eclampsia.

J. A. Thwaits (*South Af. M. Rec.*, Dec. 1914), says autopsy findings show the effect rather than the cause of the toxemia, and he thinks investigators are diverting their attention from the kidney to the placenta and ductless glands.

He gives 20 per cent. as the maternal mortality and 50 per cent. as the fetal. The following are unfavorable prognostic signs: Deep coma coming on after only one or two attacks, complete anuria, hæmoglobinuria, and continuous high temperature. When the pulse, which is full and strong at the commencement of the attack, becomes soft and frequent and the sighing

grows more marked, the prognosis is extremely grave. Increased excretion of thin light urine is a sure sign of recovery. He recommends rapid delivery.

Tuberculosis and Pregnancy.

Elmer H. Funk of Philadelphia, thinks that the tuberculous woman should be advised against marriage and conception, and that pregnancy occurring in one with an active lesion should be promptly terminated. The methods of accomplishing the latter call upon the judgment of the experienced obstetrician. (*Therapeutic Gazette,* March).

The question arises, Should one with tuberculosis ever marry or conceive? Even in the presence of an apparent cure the occurrence of pregnancy entails a risk, and as such in the majority of instances should not be taken. In the individual case the presence of a good family and personal history, an early lesion (lesion limited to slight infiltration of apex of one or both lungs, with slight or no constitutional disturbances, with slight or no elevation of temperature or acceleration of pulse at any time during twenty-four hours, with no tuberculous complication), and ample willingness and means to undergo treatment, make it reasonable to expect a cure. A patient may be considered apparently cured in whom for a period of two years, under ordinary conditions of life, all constitutional symptoms and expectoration with bacilli are absent. Even in such cases pregnancy must be considered a risk and should not be lightly undertaken unless competent medical supervision is obtainable during the entire gestation, and ample means afforded for the maintenance of a most favorable hygienic régime.

Obstetrical Notes.

A. N. Rachmanow (*Zent. f. Gyn.*) is not a believer in the ligation of the umbilical cord. He has carried out this procedure in 10,000 cases and in only 17 per cent. did he ligate and those were hemophiliac syphilitic or immature infants.

He keeps the mother quiet, on her back, after delivery. In from 12 to 18 minutes pulsation in the umbilical vessels ceases and he then ligates 2 inches from the umbilicus. He thinks the umbilicus heals better when this method is followed.

J. C. Hirst (*J. A. M. A.*) thinks the physician should take as much pains in washing for the confinement as he would for an operation.

Greer Baughman (*Va. Med. Semi-Month.*) is opposed to internal examination of a woman in labor only when the diagnosis depends upon manual examination is it permissible. He thinks puerperal sepsis would be a thing of the past if the obstetrician observed proper aseptic technic.

F. Cobb (*Boston Med. & Surg. J.*) pleads for early recognition of uterine cancer. The need of awakening the public to the fact that irregular bleeding at any time in a woman's life may mean cancer of the cervix or uterus, and should be investigated, is shown by an analysis of the 367 cases reported, of which 230, 63.8 per cent. came too late for a radical operation.

Cesarian Section.

Davis reports that from 1893-1914, at the New York Lying-In Hospital, 571 abdominal Cesarian sections have been performed (*Am. Jour. Obst.,* Jan.). In 510 cases, the mother recovered, the maternal death rate being 10.7. Of these deliveries 577 children were born, twins seven times, 69 were either still-born or died before leaving the hospital, a fetal mortality of 12 per cent; 23, or 4 per cent, were still-born.

Of the 61 mothers who died, 62 children were delivered. Forty-four children lived. Eleven died, and seven were still-born. Eclampsia and toxemia of pregnancy were the indications for Cesarian section in 85. Sixty-three per cent. of the mothers recovered. Placenta previa was the main indication in 21 cases; 14 of the 21 children lived. Three children were still-born and four died. The fetal mortality was due to prematurity.

In 78 cases 60 were delivered the second time, fifteen the third time, one the fourth, one the sixth time. Rupture of the uterus in labor subsequent to Cesarian section occured in six cases. Three mothers died, three mothers and two children lived.

The main indication for Cesarian section was some form of contracted pelvis or deformity of the spinal column—in 441, or 79 per cent. of the cases.

Pruritus Vulvae.

Pruritus vulvæ is often one of the most troublesome and most obstinate symptoms of the menopause to deal with. All hot injections must be avoided, as well as those containing irritants, such as salol, carbolic acid, and other antiseptics. Only those should be used which contain emollients (like marsh mallow or camomile), or are isotonic, saline, and weakly alkaline. (Sodium chloride and sodium benzoate 7 g. of each to the litre.)

If any discharge exists, its cause—senile endometritis, polypus, vaginitiso, etc.—must be removed. Injections of permanganate of potash 1/4,000, or of oxygen water, 3 or 4 tablespoonfuls to the quart, followed by appropriate dressings, will quickly change these secretions.

When the itching is intense, local applications should be made of swabs of wool soaked in very hot water. The parts should be touched, not rubbed. After drying, some inert ointment should be applied, followed by powdering and separating the puriginous surfaces.

℞ Bismuthi Carbonatis ..... ℥ss
Paraffini mollis ..... ℥ss
Adipis Lanæ hydrosi..... ℥j
Misce. Fiat unguentum.

℞ Zinci Oxidi,
Bismuthi Carbonatis .....ana ℥ss
Talci ..... ℥ij
Misce. Fiat pulvis.

Brocq advises the following applied warm:

℞ Phenol .....gr. viij-xv
Morphine Acetatis .....gr. vj
Acidi Hydrocyanici (1 per cent.)..... ♏ l.-℥iiss
Glycerini .....℥iss
Aquæ .....℥iv
Misce. Fiat lotio.

—*Jour. de Méd. et de Chir. prat.*

Chronic Vaginitis.

Doléris advises that a pledget of cotton dipped in the following solution be passed over the entire vaginal mucous surface:

℞ Tincturæ iodi.....℥iss
Glycerini .....℥v
M.

A cylindrical tampon covered with an ointment of zinc oxide should then be inserted:

℞ Zinci oxidi.....℥iiss
Petrolati .....℥vi
M. Fiat unguentum.

Each time the tampon is removed an injection of the following solution should be made:

℞ Liquoris plumbi subacetatis diluti.....℥vi
Aquæ bullitæ .....Oii
M.

The Physician's Library

Infection, Immunity and Specific Therapy with special reference to immunologic technic. By John A. Kolmer, M. D., Dr. P. H., Instructor of Experimental Pathology, University of Pennsylvania, with an introduction by Allen J. Smith, M. D., Professor of Pathology, University of Pennsylvania. Cloth, 899 pages, with 143 original illustrations, 43 in colors. $6.00 net; half morocco, $7.50 net. Philadelphia and London: W. B. Saunders Company, 1915.

This book may best be described when we say that the author has successfully carried out his frankly stated and three-fold purpose: 1. To give students and practitioners a concise method of the manner in which the body may be infected and how the organism tries to protect itself against infection and to present the application of this to diagnosis and treatment. 2. To give laboratory workers a safe guide. 3. To outline a laboratory course in experimental infection and immunity.

These objects have been accomplished and a veritable gold mine of scientific information is presented.

Diabetes Mellitus. By Nellis B. Foster, M. D., Assistant Professor of Medicine in Cornell University. Cloth, 243 pages. Philadelphia and London: J. B. Lippincott Company, 1915.

Owing to the widespread literature on this subject appearing in physiological, chemical and other journals not usually seen by practitioners, the author has collated the evidence from these sources and has presented it in concrete form.

It is a valuable treatise in every sense and will strike a responsive chord in the minds of those who treat this condition.

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M. D., Clinical Professor of Surgery in New York Polyclinic. Second edition, thoroughly revised. Cloth, 834 pages, with 860 illustrations. Cloth, $5.00 net; half morocco, $6.50 net. Philadelphia and London: W. B. Saunders Company, 1915.

Every procedure known to medicine will be found in this book. No longer can the graduate of years ago say that we cannot keep up with "new fangled" medicine. In the 800 pages of this volume he can get a complete post-graduate course in practical medicine.

It shows him how to use general and local anaesthetics, to transfuse blood, infuse physiological salt solution, use Bier's treatment, preserve pathological material, make exploratory punctures, examine the nose and sinuses, ear, larnyx, trachea, stomach and the various organs, to pass sounds and to do the thousand and one little things that mean so much for the comfort and assistance of the patient. The text and illustrations make this book one of the most useful ever written, as everything is made as clear as daylight.

International Clinics. Vol. I, 25th series, 1915. Cloth, 303 pages. $2.00 net. Philadelphia and London: J. B. Lippincott, 1915.

The valuable feature of this edition is Dr. Cattell's review of medicine for 1914. He and his associates have categorically reviewed the entire field of medicine. The only important omission a cursory inspection shows is that of Schick's test. Other articles of especial interest are "The Heart in Syphilis," by Harlow Brooks; "Clinical Significance of Variations in the Systolic and Diastolic Blood Pressures and the Pulse-Pressure," by E. E. Cornwall, and "Therapeutic Value of Direct Transfusion of Blood in Diseases of the New-Born," by V. D. Lespinasse. As is usual with the papers in this series those in this volume are of much practical value.

The Commoner Diseases. By Dr. Leonhard Jores of the University of Marburg. Translated by William H. Woglom, M. D., Assistant Professor in Columbia University. Cloth, 424 pages, illustrated. $4 net. Philadelphia and London: J. B. Lippincott Company, 1915.

This is a lexicon which interprets clinical findings. As such it is of unusual value. The relationship between the anatomy and physiology of each part described is explained, so that in disease it is easy to observe the relation of anatomical alteration to physiological derangement. This book will map out many landmarks which will prove distinctive diagnostic aids. The translator has added some of his own views to those of the author and the contribution is a happy one. The cuts are exceptionally clear and enlightening.

The Difficulties and Emergencies of Obstetric Practice. By Comyns Berkeley, M. D., M. R. C. P., Eng., and Victor Bonney, M. D., F. R. C. S., Eng., of the faculty of Middlesex Hospital, London. Second edition. Cloth, 807 pages, illustrated. $7.50 net. Philadelphia: P. Blakiston's Son & Co., 1915.

This work differs from the usual text book on obstetrics in that it omits the technic of normal pregnancy and labor and concerns itself entirely with the many difficulties which attend obstetrical practice. The various disorders of the respiratory, intestinal and urinary tracts, skin, abdominal organs, ductless glands, circulatory and nervous systems are considered in separate chapters. Then are described the infections, displacements, tumors, hemorrhages, the numerous complications of labor, post-partum difficulties, obstetric operations and the diseases and injuries of the infant.

The book is comprehensive in the extreme and is of great value to the physician as it covers far more carefully than the ordinary work on obstetrics and the many difficulties encountered in the practice of midwifery.

The printing is excellent and the pictures add much to the value of the text.

Fissured Hands.

Rub a few drops over the hands morning and evening:

℞ Aquæ rosæ, ℥iiiss. (100.0)
Glycerini neutralis, ℥j. (30.0)
Acidi tannici, gr. viiss. (0.5)
M. On retiring apply one of the following:

I.

℞ Vanillini, gr. viiss. (0.5)
Olei rosæ, gtt. j. (0.06)
Adipis lanæ hydrosi, gr. lxxv. (5.0)
M. et ft. unguentum.

II.

℞ Mentholis, gr. xxij. (1.5)
Phenylis salicylatis, gr. xxx. (2.0)
Olei alivæ, ℥iiss. (10.0)
Adipis lanæ hydrosi, ℥iss. (50.0)
M. et ft. unguentum. (*N. Y. Med. Jour.*)

Dysentery.

For the painful tenesmus the local application of opium and belladonna in suppository is said to be efficacious:

Opii Pulveris.....gr. j
Ext Belladonnæ Fol.....gr. ss
Olei Theobromatis.....℥ss
M. et ft. suppostoria No. x.
Sig.:One inserted in rectum every three to six hours.